On one day we were in the saddle on horseback for eight hours and on the move for more than ten, all above 4 000 metres altitude and at 4,750 metres at the highest point.

It should be noted that there are no resident medical practitioners nearer than Faizabad (in Afghanistan). Although there may be doctors geographically closer, across the river in Tajikistan, in Kharogh, and possibly in Ishkeshem, for an emergency it would require the agreement of the Russian-officered border guards in order to cross the river, either at Ishkeshem or Prip (near Ghaz Khan). The Aga Khan Development Network, which operates on both sides of the river, might be able to help with this in an emergency. However, in a real emergency it would almost certainly be necessary to contact Kabul by radio or satellite telephone and ask for a helicopter. (See radio/satellite telephones.)

Clothing

This mission took place towards the end of the summer season and beginning of autumn (late September early October) when it is still possible to travel safely and comfortably in the high mountains. Although some herdsmen continue to live in the high valleys such as in Ishtemich with their flocks throughout the winter, and the Kyrghyz never leave the eastern Big Pamir and the Little Pamir, weather in the high mountains can become very tricky after September and indeed can be treacherous in any season. There was heavy rain one night, and it snowed several inches on another night while we were in the Big Pamir. Even in July and August, it can be very cold at night in the high mountains, although even in late September/early October at the time of the mission, it could be sunny and quite warm during the daytime, especially when walking. Clothing should be selected to accommodate this. Temperatures drop very fast once the sun goes down or when clouds blow up. As in any high mountain country, weather conditions can change rapidly and dramatically.

Warm clothes are essential, as are good thick socks and good mountain boots. Light waterproof trousers are needed if there is likely to be rain or snow. A warm and waterproof jacket is essential. As it may be difficult to dry out clothes if they get wet, a set of dry clothes is advised. A lightweight down puffer can be useful. The woven woolen pakhal 'Chitrali' hats favoured by the local people are excellent for when it is cold. A good, light telescopic mountain stick is useful. A good pair of sunglasses and sun block are essential for the higher elevations, particularly up in the snow.

A medium-sized rucksack and a good quality light sleeping bag with a liner are essential. A good local woven wool Afghan light blanket or patu is very useful. A light inflatable sleeping mat will help make nights a little softer. Remember that there will be horses to carry the baggage, which gives a little leeway. Although the local horsemen are generally well-equipped with locally woven horsehair ropes, leather straps, and saddlebags (all necessary for the life they lead), it can be useful to bring some additional strong webbing straps.

Optical Equipment

Cameras are obviously a matter of personal choice. Both of us were equipped with digital cameras, which proved to be invaluable, but note should be taken that as one is away for some time from any source of electricity, missions must ensure that they have spare and fully charged batteries. A good pair of binoculars (8 x 40 at least) is necessary, plus a spare pair for a guide, otherwise yours will be constantly borrowed. A spotter scope with a tripod is useful for when one has spied animals, wild sheep, ibex, and so on, which are usually at a great distance from the observer.

Radios and Satellite Telephones

This is something that needs careful consideration. We were equipped with a Thuraya satellite telephone, which worked quite well. The trouble was that apart from the high cost of the system, we had no means of

recharging the battery and therefore used it very sparingly. Fortunately, we had no crisis that required lengthy conversations.

Field Reference Books

It is difficult to take any great weight of reference books on missions into the mountains, but the minimum should include a handbook of birds. Nothing is absolutely perfect, but for birds a handbook such as *The Birds of Europe, with North Africa and Middle East* by Heinzel, Fitter, and Parlow will cover 90 per cent of what one is likely to see. Other field guides covering the birds of northern India and Pakistan including those species more peculiar to the Himalayas and northern subcontinent should cover the rest.

We have not found a satisfactory portable field guide for this part of the world. There are a number of weighty inventories, particularly prepared by the previous USSR, which cover the mountain ranges of Central Asia, which necessitate a knowledge of Cyrillic as well as the scientific Latin classification. But we have not yet found a handy, illustrated field guide. A general knowledge of the botany of high mountains from Turkey through Iran, Afghanistan, and Central Asia is very helpful for anyone visiting the Wakhan and the Afghan Pamir, as there are many similarities.

A fairly comprehensive inventory of the mammals of the Pamir was established in the studies carried out by Petocz in the 1970s. We had with us sets of photographs and illustrations, which helped in getting local names.

Security

The Wakhan and the Afghan Pamir are among the calmest and most secure parts of Afghanistan. In fact, this can be said of all of the province of Badakhshan at the present time. This allowed the mission to stay in villages, leave the main road and camp, and stay with local herdsmen and their families in complete safety. The local Wakhi population have without any serious protest handed in their more lethal arms and appear to be honouring the present hunting ban. It can only be hoped that this situation will continue.

Care must, however, be taken with the border with Tajikistan. The Russian-officered border guards may shoot at those who look as if they might be taking an interest in trying to cross over without authority and get nervous if binoculars and telescopes are trained on them. It also appears that Pakistan is taking more care of its frontier and the various passes that lead into Chitral and the Northern Areas.

Contact with Local Authorities

The mission made contact with local authorities, if available, but we were put on notice by the district governor in Ishekeshem, who asked if we had a letter from the Governor of the Province in Faizabad, which we had not obtained and would not let us proceed further until he had contacted Faizabad. The issue was soon settled by a radio call, but future missions should save themselves any delays by arming themselves with appropriate letters before they leave Badakhshan.

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Further information

Further technical information may be obtained from the UNEP Post-Conflict Assessment Unit website at:
http://postconflict.unep.ch

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The mission was specifically commissioned to:

- conduct preliminary wildlife and pasture assessments in the areas visited using visual observations, interviews, and previous studies;
- determine the extent of human-wildlife conflicts in the areas visited;
- collect information on social issues, food security, and people's dependence on natural resources in the areas visited;
- identify existing protected area boundaries, using interviews, GPS, and existing maps;
- identify key changes and threats to protected areas such as deforestation, overgrazing, drought, wetland loss, erosion, and desertification;
- determine the status of biodiversity within existing and potential protected areas and key threats to these biodiversity components;
- identify any local measures that have been taken to conserve natural resources, including monitoring and enforcement mechanisms;
- identify potential partners for the implementation of community-based natural resource management programmes;
- identify traditional decision-making structures and land use practices used in local communities
- identify existing management structures and determine management needs;
- identify potential sites for future protected area designation and determine appropriate boundaries based on an analysis of connectivity needs; and
- identify opportunities for regional cooperation through transboundary peace parks and shared resource management areas.


ANTHONY FITZHERBERT

Wakhan corridor assessment team with local guides

The Wakhan Corridor team was composed of the following individuals:

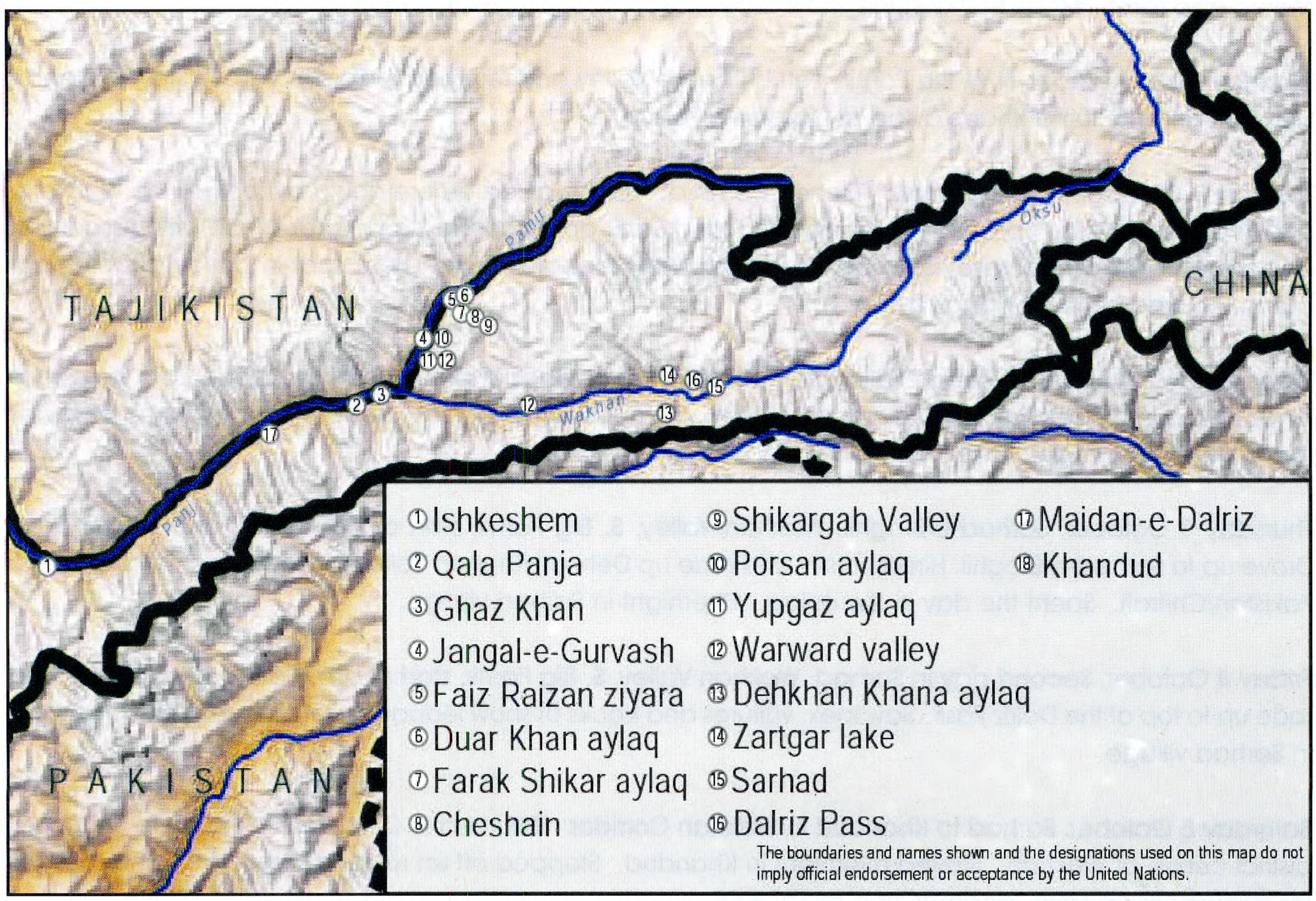
- Mr Anthony Fitzherbert (Team Leader/Rapporteur/International Expert), FAO on secondment to UNEP Post-Conflict Assessment Unit. Extensive experience in Afghanistan and the neighbouring countries managing projects and undertaking studies involving agriculture, horticulture, herding and grazing, forestry, irrigation and rural development.
- Dr Charudutt Mishra (International Expert), International Snow Leopard Trust (ISLT). Experience in community-based resource management and human-wildlife conflicts.
- Mr Assadullah Khairzad (Local Expert), Save the Environment Afghanistan. Knowledge of the Wakhan Corridor and environmental issues in Afghanistan.

The mission was conducted in tandem with four other assessment teams working on urban environmental problems, transboundary water resources and desertification, protected areas and wetlands, and forest resources. The final report containing the findings of all five assessment teams was published in February 2003 and can be downloaded from the following link: *http://postconflict.unep.ch/afghanistan/report/afghanistanpcajanuary2003.pdf*

1.3 Summary of Mission Agenda

A detailed account of the mission is provided in Annex 1 in the 'Mission Diary', but presented here is a brief summary of where the mission traveled, how and where they stayed, what they saw, and with whom they met.

The team members arrived in Kabul on the UN flight of 20 September. In Kabul on 20 and 21 September they met other members of the UNEP team, were briefed, collected their equipment, had meetings with other agencies such as FAO, and had a security and mine-awareness briefing. They arranged for maps from AIMS and met up with Assadullah Khairzad from the Afghan environmental NGO, Save the Environment Afghanistan (SEA).



Key locations visited by the Wakhan Corridor Team

Monday 23 September. Faizabad. The mission flew to Faizabad, provincial capital of Badakhshan. Met up with the UNAMA local representative Abdullah, made arrangements for hiring transport, and procured supplies and equipment for the mission to Pamir, including borrowing a tent from UNICEF. In Faizabad we also had meetings with leading NGOs including Afghanaid and FOCUS/Aga Khan Development Network, operating in Badakhshan.

Tuesday 24 September. Faizabad to Ishkeshem. The mission drove from Faizabad to Ishkeshem on the Tajikistan frontier. Stayed the night at the Afghan Aid base.

Wednesday 25 September. Wakhan. The mission drove up the Wakhan Corridor as far as Qala Panja village. Stopped at Khandud (district centre of Wakhan) to have discussions with local people and pick up hunter/guide to the Pamir, Mahmad Sabir. In Qala Panja stayed the night with local Ismaili community leader Sayed 'Shah' Ismael. Here the mission arranged six horses and horsemen for the next day to go on into the Big Pamir.

Thursday 26 September. N.W. Big Pamir. Drove to Ghaz Khan Village and picked up horses. Vehicles sent back to Faizabad. Proceeded up the Pamir river into the northwest Big Pamir, on foot and by horse. Camped overnight at Jangal-e-Gurvash.

Friday 27 September. N.W. Big Pamir. Walked and rode to the Ishtemich Valley. Camped with Md. Zaman herding group's aylaq at Duar Khan.

Saturday 28 September. N.W. Big Pamir. Went up to valley to Bakhshah herding camp aylaq. Rode up Ishtemich Valley to bottom of Shikargah and Khoshabad valleys. Spotted a group of male ibex and a group of Marco Polo sheep-females and young. Stayed night in Bakhshah's aylaq at Farakh Shikar.

Sunday 29 September. N.W. Big Pamir. Rode up to the head of the Shikargah Valley, spotted ibex and Marco Polo rams. Many tracks in the snow. Spent second night in Bakhshah's aylaq.

Monday 30 September. N.W. Big Pamir. Left Ishtemich Valley and returned to Porsan Valley. Stayed night in Md. Hassan and Juma Khan's aylaq at Dargan-e-Porsan.

Tuesday 1 October. N.W. Big Pamir. Pitched camp at Yupgaz aylaq before going by foot up the Warwarm and Yupghaz valleys. Split into two parties, ARF and Sabir going up the Yupgaz Valley, CM with Assadullah going up the Warwarm Valley-saw ibex and fresh snow leopard tracks. Bear scat in barley stubble near camp. Stayed night in Yupgaz aylaq.

Wednesday 2 October. Wakhan Valley, Southern Big Pamir. Ghaz Khan to Neshkow. Rode from Yupgaz to Ghaz Khan before fording the Wakhan river. Met pick-up, paid off horses, and drove up Wakhan Valley as far as Neshkow village. Stayed with farmer Md. Sufi in Neshkow.

Thursday 3 October. Sarhad-e-Broghil. Wakhan Valley, S. Big Pamir, start of Little Pamir and Broghil Pass. Drove up to Sarhad-e-Broghil. Hired horses and rode up Dehkan Khaneh Valley towards Broghil Pass (over to Pakistan/Chitral). Spent the day in the aylaq. Overnight in Sarhad village.

Friday 4 October. Second day in Sarhad. Wakhan Valley, S. Big Pamir, start of Little Pamir. Hired horses and rode up to top of the Dalriz Pass. Saw ibex, vultures and tracks of snow leopard, wolf, and marten. Overnight in Sarhad village.

Saturday 5 October. Sarhad to Khandud in Wakhan Corridor. Returned to Qala Panja and on to Khandud-district centre of Wakhan. Stayed overnight in Khandud. Stopped off en route in Wazut and other villages for discussions on snow leopards and agriculture.

Sunday 6 October. Khandud to Faizabad via Ishkeshem, Zebak, Warduj, and Baharak. Made a quick survey of Ishkashem market for any evidence of wildlife trade. Overnight at UNAMA guesthouse, Faizabad.

Monday/Tuesday 7 and 8 October. Faizabad. Regrouping in Faizabad. Meetings with FOCUS/Aga Khan D.N., UNICEF, inspecting bazaar for trade in wildlife and writing up mission notes.

Wednesday 9 October. Kabul. Flew back to Kabul via Kunduz, arrived afternoon by UN plane. Overnight at UN staff house, Kabul.

Thursday/Friday 10 and 11 October. Kabul. Survey of chicken street market for trade in wildlife. Debriefing with UN agencies. UNEP, FAO, UNOPS, UNDP, and so on. Met Dr Ron Petocz on contract for ADB, surveyed fur bazaar, general administration, and (when time) writing up mission notes. Spent nights in UN staff house, Kabul.

Sunday 12 October. Kabul to Dubai. ARF and CM flew from Kabul to Dubai by UN plane. Overnight in Dubai.

Sunday 13 October. Dubai to Geneva/India. ARF flew from Dubai to Geneva. In Geneva debriefed with Henrik Slotte, UNEP PCAU. Flew on to UK Manchester. CM flew from Dubai to India.

1.4 Methods

1.4.1 Transportation

The mission team traveled in the Wakhan Corridor on foot, horseback, and four-wheel- drive vehicles. Fieldwork lasted between 25 September and 5 October 2002. This was followed by a survey of markets for wildlife products in Wakhan, Ishkeshem, Faizabad, and Kabul. (A summary of the places visited is contained the Mission Diary Annex 1. A more detailed account of the routes we traveled and the places visited, passed, or stayed in, together with their coordinates, is given in Annex 8 of the Report.)

1.4.2 Wildlife and Pasture Assessments

The team made descriptions of the landscape and vegetation in the surveyed areas. Dominant plant species in the pastures were recorded, and pasture quality was assessed based on plant cover, presence of important forage and graminoid species, relative abundance of non-palatable or weedy species, and signs of erosion caused by intensive grazing and trampling. Because of limited time, we relied on qualitative visual assessments. Together with two local hunters and horsemen who formed part of our survey team, we periodically scanned the slopes for large mammals and birds using binoculars and a spotting scope. We maintained records of animal sightings as well as their signs (droppings, tracks, carcasses, skulls, and so on). For all important direct sightings and indirect evidences, we noted the geographical location (latitude and longitude) and altitude. These field surveys were supplemented by extensive semi-structured interviews of villagers, herders, and hunters. We showed them photographs of several mammal species of interest and recorded the local knowledge on their occurrence. We also recorded people's perceptions on the changes (if any) in pasture quality and wildlife abundance.

1.4.3 Human-Wildlife Conflicts and Wildlife Trade

Our assessment of human-wildlife conflicts was based on extensive interviews and site visits. We asked the villagers and herders if they lose crops or livestock to wildlife, and if there were any instances of people being attacked or injured by large wildlife. We asked them for details about any previous instances of losing livestock to any wild predator; species identity of the predator if available; the number, age, and sex of livestock lost; the total number of livestock lost in the previous year; and so on. Wherever possible, we cross-

checked the information provided for its validity by asking others. When people reported instances of unusually high surplus killing of livestock, we cross-checked the information, and, wherever possible, made site visits. We also asked people what preventive or retaliatory measures they employed against predators. Detailed notes were taken in instances where predators were killed. We asked hunters about the time and place of hunting, the weapons used, the sequence of events, motivations for hunting, sex of the predator, and what they did with the carcass or body parts after killing the predator.

Through these interviews, we tried to establish if there was a direct link between the fur markets of Kabul and the levels of hunting in the Wakhan Corridor; that is, if Wakhi hunters were killing wildlife with the objective of catering to the trade in wildlife. We surveyed the markets in Ishkeshem (the headquarters of the Wakhan district), Faizabad (the provincial headquarters of Badakshan province), and Kabul for wildlife and wildlife products in trade. We interviewed fur traders and recorded the species on display, their prices, their sources, the turnover (average number of furs obtained every year), and the process of obtaining the furs.

In addition to numerous casual conversations with villagers, herders, hunters, government officials, and NGO representatives, we conducted several detailed interviews of individuals and sometimes groups of local people to assess the status of wildlife and human wildlife conflicts. These detailed interviews numbered 27 and included four hunters, four local traders, and four fur traders, with the remaining being groups of villagers and herders.

1.4.4 Collecting Information on Social Issues, Food Security, People's Dependence on Natural Resources

The section on the recent history of the Wakhan and the Pamir in this report has been drawn from recent historical sources, backed up by Mr. Fitzherbert's own knowledge from long association with Afghanistan and the region. Information for this section also came from conversations with local farmers and herdsmen on this mission drawn from their own firsthand experience and memories. These conversations and inquiries were of an informal nature, conducted while we were staying with the local people or traveling with them in the Wakhan and the Pamir.

This was Fitzherbert's third mission to the Wakhan, although his first into the Big Pamir. Much of the basic information on agricultural and herding systems as well as the main socioeconomic problems was first gained during these earlier missions. The first was in July 1995 as part of an assessment mission for the United Nations Drug Control Programme (UNDCP) as the agricultural consultant with a small multidisciplinary mission team, including a specialist in drug addiction and abuse. The second mission was again in the capacity of agricultural consultant, in June 1998, as part of an initial rural assessment team commissioned to visit the remoter parts of Badakhshan, including Wakhan, on behalf of the Aga Khan Foundation. The object of that mission being to lay the foundation for a long-term, community-based rural development and assistance programme for the region. Mr. Fitzherbert has also done work in recent years in Tajikistan, including visiting the Pamir Gorno Badakhshan on several occasions, as well as in Kyrghystan, the border areas of Pakistan in Chitral, and the Northern Areas of Gilgit and Hunza. He has since maintained close contact with the AKDN and their current main implementing partner in the Wakhan, FOCUS.

Much of the basic information on the area derives from those earlier missions, brought up-to-date with observations as well as discussions held with local farmers and herders through the Wakhan Corridor between Ishkeshem and Sarhad-e-Broghil and into the Big Pamir. The previous missions had been at a season still well before harvest, so that this mission, coinciding as it did with the main wheat and pulse harvest in the Wakhan Valley, was able to add another dimension to the previous ones. Conversations and inquiries with farmers, herdsmen, and itinerant traders were always of an informal nature, nonetheless containing salient points. It was not the main purpose of the mission to look in any depth into the current situation in respect to the serious traditional social problems of the area such as opium addiction, a delicate subject. What has been stated here is more impressionistic than otherwise.

1.4.5 Limitations of the Report

Although the mission was able to travel all through the main Wakhan strip, and as far up the Wakhan as Sarhad-e-Broghil and the surrounding mountains, as well as spending a week riding and walking into and around the valleys of the northwestern Big Pamir, time did not permit us to get as far as the Kyrghyz either in the eastern Big Pamir or in the main part of the Little Pamir. This would have required an additional two weeks to accomplish, as all must be done on horseback or on foot. The closest we were able to get to the Kyrghyz was still two good days' ride to their nearest herding camps. The importance of the Kyrghyz is discussed in detail in section 4.6.

2 BACKGROUND

2.1 Afghanistan

Even going back to what is often now seen as something of a 'golden age' before the series of political upheavals in the late 1970s (which culminated in the Soviet intervention in December 1979), Afghanistan was one of the poorest countries in Asia with some of the worst social indicators in terms of health, education, infant mortality, and life expectancy.

Nonetheless, by the 1970s considerable progress was being made in terms of agricultural and rural development, and a growing and positive interest was being paid to the preservation of the country's natural environment and unique wildlife. A number of national reserves were being established with international assistance and support, among them the Pamir-e-Buzurg (Pamir-e-Kalan) or the Big Pamir at the eastern end of the Wakhan Corridor in northeastern Afghanistan, the home of the fabled Marco Polo sheep, arguably the most magnificent of the world's wild sheep.

The Soviet intervention of December 1979 tragically brought a halt to all of this, as the country entered ten years of a devastating war, which tore the institutional fabric apart, leading to the death of more than 1.5 million Afghans and the forced migration of between 5 and 6 million more. The Soviet withdrawal in April 1989 only ushered in another terrible phase of civil strife as first the various *Mujahideen* groups battled with the communist forces of Dr Najubullah, and after 1992 battled among themselves over the ruins of Kabul. This anarchy led directly to the rise of the Taliban from late 1994 and to the continued civil war between the Taliban with their foreign backers and the forces of the Northern Alliance with their own foreign backers. This continued until the events of 11 September 2001 and their aftermath brought Afghanistan once more to a position in which some hope of peaceful development can be proffered.

The war and civil strife have left the country awash with lethal arms, and littered with land mines, with millions displaced from their homes, and the virtual collapse of all the working institutions of state. To add to this misfortune, Afghanistan has been gripped for the past four years in a terrible and unprecedented drought that has dried up some of its major river systems and wetlands, rendered rain-fed farming almost totally unproductive, and seriously affected large parts of its rangelands and the herds and flocks that depend on them. In addition to the enormity of the human tragedy, Afghanistan's fragile environment and already threatened wildlife have been victims.

Because of its remotness even in Afghan terms, few outsiders have visited the Wakhan and the Afghan Pamir in the far northeast in recent years. Fewer still of these have done so with a view to assessing the state of the environment and the wildlife in this region after 24 years of conflict, strife, and institutional collapse. Essentially, this was the purpose of the mission, not only to start making an assessment of the state of the environment and the wildlife but also to set it within its human as well as its geographical and political contexts.

2.2 The Wakhan and the Pamir Knot

The Wakhan Corridor: 36° 59' N to 70° 29' N, 72° 45' E to 73° 30' E

Approximately 210 km east to west and between 20 km and 60 km north to south between the frontiers with Tajikistan and Pakistan. In total approximately 10 300 km^2.

It is important to understand the historical and political background to the Wakhan Corridor, which seems to fit so awkwardly into the great knot of mountains where the Hindu Kush, the Pamirs, and the Karakoram ranges meet.

This strange panhandle of land jutting out of the northeast corner of Afghanistan came into being as an integral part of Afghan territory only as the result of frontier wrangling between Imperial Russia and Imperial Britain in the 1880s and 1890s, a period during which Czarist Russian forces consolidated their control over

the Central Asian Khanates and Emirates. Imperial Britain, in response, moved up from the Indian plains into the mountain principalities now incorporated in Chitral and the Northern Areas of Pakistan. Quoting Louis Dupree in his book Afghanistan (1980):

"By 1891 the scene shifted to the northeastern boundary as the Russians attempted to explore and annex the Wakhan area. This would in effect outflank the northwestern boundary (of Afghan territory under the control of Amir Abdur Rahman) and give Russia a common boundary with British India. Considering themselves seriously threatened, the British reacted vigorously, and forced Russia to negotiate. Amir Abdur Rahman, with the British still in control of his foreign policy, resumed his role as bystander. Britain and Russia agreed to give Russia all the land north of the Amu Darya and Afghanistan all the land south of the Amu Darya. Also the British forced Afghanistan to accept control of the Wakhan, a rugged area still incompletely mapped. Abdur Rahman objected to the 'gift' exclaiming he had enough problems with his own people and did not wish to be held responsible for the Kirghiz bandits in the Wakhan and the Pamir."

Nonetheless, the territory and its boundaries were reluctantly accepted and have remained an integral part of Afghan territory, meaning that at no point did British India touch Tsarist Central Asia. Another Joint Boundary Commission fixed the extreme northeast frontiers in 1895-96. This included its easternmost point where the frontier crossed a rough jumble of mountains and glaciers to form a frontier with China. This remained somewhat undefined until as late as 1964, when it was finally settled between Afghanistan and China. Wakhan and what became known as the Big and Little Afghan Pamir were incorporated into the Afghan Province of Badakhshan, which the Afghan ruler and father of the present state of Afghanistan, Amir Abdur Rahman, had brought under his control in 1888. These frontiers established in the late 19th century remain the frontiers today between Afghanistan and the modern states of Pakistan, Tajikistan, and China. Travelers in the Wakhan can never be unconscious of frontiers, either with Tajikistan to the north or with Pakistan to the south, as they are always within sight, either along the river or along the mountain ridges. The narrowness of the 'corridor' is always before one's eyes.

There are a number of places along the main Wakhan Corridor between Ishkeshem and Qala Panja at the junction of the Pamir and the Wakhan where it is quite easy to lob a stone across the river to the asphalt road running along the Tajikistan side.

2.3 Geographical Description of the Wakhan Corridor

2.3.1 Population

The total population of the Wakhan/Pamir area is thought to be in the region of 1 335 households totaling 10 590 people, according to assessments made by the Aga Khan Rural Development Network (FOCUS) for their food assistance programmes. Of these, the majority are Wakhi farmers and herders inhabiting the main Wakhan strip between Ishkeshem and Qala Panja and thereon up the Wakhan Valley as far as Sarhad-e-Broghil. These include herding families who use the western valleys of the Big Pamir and the Little Pamir. The number also includes between 210 and 240 (depending on the source) households of yurt- (domed felt tent) dwelling Kyrghyz herders, or an estimated total population of about 1 100 to 1 300. Of these, possibly as many as 140 +/- households live in the northeastern valleys of the Big Pamir, and approximately 100 +/- households live in the Little Pamir. (A detailed breakdown of population as provided by AKDN/FOCUS is shown in Annex 3.)

2.3.2 Frontiers

The northern boundary of the 'corridor' with Tajikistan is formed by the Amu Darya river, which is known along this stretch as the Panj, at least as far upstream as where it is joined by the Wakhan River at the western end of the Pamir Knot. From this point upstream it is known as the Pamir, as far as its headwaters and source in Zor Kol Lake, which lays claim to being the main source of the Amu Darya or Oxus River.

Occasional bridges across the river to the north, at Ishkeshem at the western end of the Wakhan and at Prip, just upstream of the Pamir/Wakhan confluence, are currently guarded by Russian-officered frontier guards, who are known to shoot those who try to cross unauthorized. There are other possible transfrontier crossing points at Zor Kol Lake and at the far eastern end of the northern frontier, where part of the border has been fenced by the Russians. These crossing points are closely guarded and closed, although it is possible to cross the bridge at Ishkeshem for those who possess the correct papers and visas. In September 2002 a new bridge was completed 40 kilometres downstream of Ishkeshem, between Korokh in Tajikistan and Sheghnan in Afghanistan. Other crossing points are proposed under the Aga Khan's programme and are under discussion.

The southern frontier with Pakistan runs along the ridge and watershed of the mountains, which make the easternmost spurs of the Hindu Kush range until they merge in a jumble of high mountains and glaciers where the Pamir and the Karakoram ranges meet on the borders of China, Afghanistan, and Pakistan.



Domed felt tent yurt

2.3.3 The Headwaters of the Amu Darya

The two headwaters of the main Amu Darya/Panj River-the northern branch, the Pamir rising in Zor Kul Lake, which is divided between Tajikistan and Afghanistan, and the southern Wakhan River, which flows out of Chakmatin Lake-enclose what is known as the Afghan Pamir 'knot'. The northern and western block of mountains is known as the Pamir-e-Kalan or the Pamir-e-Buzurg (both meaning the Big Pamir). The eastern-most block of mountains, which forms the watershed of the Wakhan River, is known as the Pamir-e-Khord (meaning the Little Pamir) and comprises the southern and easternmost ranges of the Pamir Mountains. The main massif of the Pamirs lies in Tajikistan, north of the Amu Dariya/Panj/Pamir River, mostly within the boundaries of the Autonomous Oblast of Gorno Badakhshan.


Confluence of the Wakhan and Pamir rivers

2.3.4 The Three Divisions of Wakhan-The Wakhan Corridor, the Big Pamir, and the Little Pamir

The Wakhan Corridor can be roughly divided into three parts. The Main Wakhan strip lies between the district centre and border station of Ishkeshem at the western end and the village of Qala Panja at the eastern end, which is situated at the confluence of the Wakhan and Pamir headstreams. East of the confluence of the rivers lies the Pamir Knot, with the Big Pamir comprising the westernmost and highest block of mountains in the 'knot', separated from the Tajikistan Pamir by the deeply incised valley of the Pamir River. The southern and easternmost block of mountains in the 'knot' is the Little Pamir, which is defined by the upper valley and headwaters of the Wakhan River.

Main Wakhan Corridor The main Wakhan Corridor is comprised of a narrow strip of riverine terrace along the left bank of the Ab-e-Panj River, flanked to the south by the easternmost spurs of the Hindu Kush mountains and crossed by many stony fans and flood washes issuing from these ranges. It is about 110 km long from east to west and seldom more than about 20 km broad between the Tajikistan and Pakistan frontiers. The whole of this section incorporates about 2 200 km². The mountains, which form an almost impassable barrier along the southern frontier, rise to snow-covered peaks and ridges of 6 000 meters and above, with glaciers and deep, steep, rocky valleys, which occasionally give access through to Chitral on the Pakistan side. These valleys are used as summer grazing for livestock belonging to the villagers living along the line of the river, and are also home to mountain ungulates such as ibex and urial and their main predators, the snow leopard and wolf. Red fox (*Vulpes vulpes*), lynx (*Lynx lynx*), various small wildcats, and martens also occur here as well as their prey, the cape hare (*Lepus capensis*), marmots, pikas and a variety of small rodents voles and mice. The area was never previously considered as part of a national park or reserve, but this should now be given serious consideration in view of its biodiversity and the local population of snow leopard documented in this report.

Along the river between Ishkeshem and Qala Panja there are about 18 or 19 agricultural/herding settlements of various sizes, inhabited by people speaking the local Wakhi language. They adhere to the Ismaili branch of the Muslim faith and are followers of the Aga Khan. The district centre and seat of the *woluswal* or District

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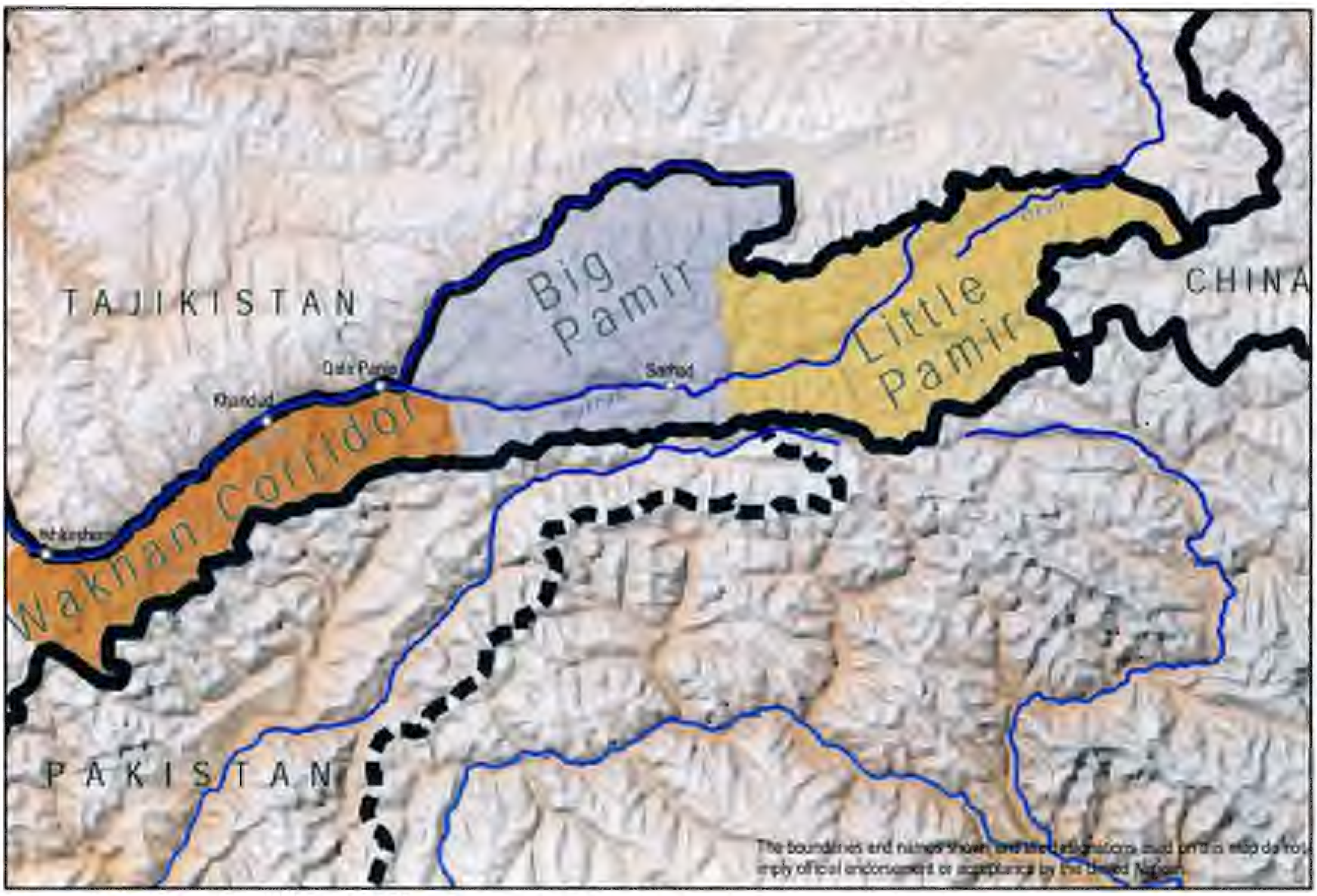
Afghanistan

Wakhan Mission Technical Report



For Internal Use Only

Geneva, July 2003



Three main divisions of the Wakhan Corridor

Governor of Wakhan is in the village of Khandud, two-thirds of the way to Qala Panja. Qala Panja is the traditional seat of the family of influential hereditary Sayeds, whose head is the local Ismaili religious and social leader or 'Shah' of the Wakhan. The Wakhis are transhumance herders and farmers, owning cattle, sheep, and goats and (particularly toward the Pamir) also yaks and Bactrian camels. They cultivate crops of wheat, barley, and millet, which is cultivated in rotation with pulses such as broad beans *baghala* (*Vicia faba*), field peas myshyng (*Pisum sativum*), grass pea patak (*Lathyrus sativus*) and small garden plots of potatoes. All crops are spring sown. A few apricot and apple trees are found in some villages but the area is generally too high for fruit production. (For details of farming and herding systems see Sections 3.7 and 3.8.)

Along this strip can also be found some fine broad '*chaman*', or boggy sedge and grass pastures used by the local villages for common grazing. A fringe of scrubby brushwood covers much of the wetter ground with dwarf willow (*Salix sp.*), buckthorn (*Hippophae sp.*), and tamarisk (*Tamarix sp.*), which in addition to dung fuel provide fuelwood for the villagers. Some villages have small plantations of poplar and aspen (*Populus sp.*) for local use in construction as well as for sale as timber.

The area is characterized by chronic poverty and food deficit as well as having a history of opium addiction and other multiple problems associated with poverty, poor diet, harsh climate, and isolation. (See section 4.5 on social issues.) At the eastern end of the valley, many Wakhi herding families use the Big Pamir as seasonal grazing for their livestock in the summer months, and some even use parts of the Big Pamir during the winter as well. In the Big Pamir the mission team stayed with some of these Wakhi herding families.

The mountain grazing is characterized by woody species such as *Artemisia*. Some low scrub composed of *Rosae spp.* and *Berberis sp.* appears in places where there is enough moisture, and in some places there are the remnants of scattered juniper (*Juniperus sp.*) forest.

Agriculture and settlements lie along the line of the Panj River at altitudes between 2 600 and 3 000 m. The winters are characterized by intense cold and icy winds drawn down the funnel of the Panj Valley. On occasion there are heavy snowfalls, but generally the road is clear or swept clear by the wind.

The road between Ishkeshem and Qala Panja and beyond was constructed in the 1950s-60s. It was in very poor condition until the mid-1990s, but has been much improved as far as Qala Panja in recent years. It remains nonetheless a four-wheel-drive road annually destroyed by the floods where it crosses the innumerable flood 'washes'.

The Big Pamir The Big Pamir comprises the main block of mountains at the western end of the Pamir Knot between the fork of the Pamir and Wakhan rivers. The Big Pamir comprises a block of high mountains and plateaux of about 4 500 km^2, about 100 km from east to west and between 20 and 60 km broad from north to south between the valleys of the Pamir and Wakhan rivers.

This is home to the Marco Polo sheep, as well as ibex, urial, snow leopard, brown bear, lynx, wolf, and fox, the long tailed marmot (*Marmota caudata*), various wildcats, martens, weasels, otters, hares, pikas and small rodents (Petocz and others 1978).

The highest ranges rise to between 6 700 and 6 900 m and are characterized by perpetual snow and glaciers from which streams drain north into the Pamir and south into the Wakhan River. There are indications that the glaciers have been retreating at a rather rapid rate in recent years. The northwestern and southern slopes of these valleys provide grazing for transhumance Wakhi herding families with settled homes in the villages at the eastern end of the main Wakhan strip and in the settlements along the Wakhan Valley between Qala Panja eastwards to Sarhah-e-Broghil (or Sarhad-e-Wakhan). The northeastern section of the Big Pamir Mountains is inhabited by yurt-dwelling Turkic Kyrghyz herding families, living all year in their felt yurts; tending their flocks of sheep and goats as well as cattle, yaks, horses, and Bactrian camels; and moving seasonally over the mountain range, although inevitably and seriously restricted by the 19th century political frontiers. (M. Nazif Shahrani. *The Kirghiz and Wakhi of Afghanistan. Adaptation to Closed Frontiers and War.* University of Washington Press. Updated September 2002).

Between Qala Panja traveling eastward up the Wakhan Valley as far as Sarhad and between the junction of the Pamir and the Wakhan there are about thirty settlements, mostly quite small and consisting of only a handful of houses, established along the alluvial river terraces and fans. (See Annex 8.) As in the main Wakhan strip, this area is inhabited by Wakhi-speaking farmers and transhumance herders cultivating wheat, barley, pulses, and a little millet and potatoes. Barley becomes the main-indeed the sole-crop in the middle-altitude *aylaq* (summer camp) between 3 400 and 3 600 m. Wheat is the dominant cereal crop up to 3 400 m. with barley above this altitude.

The two rivers are fringed for much of their length by a scrubby woodland of willow (two species) with scattered birch (*Betula sp.*) and extensive thickets of sea buckthorn, rose, and occasional thickets of currant bushes (*Ribes sp.*). Particularly impressive at this time of year were the sea buckthorn thickets laden with deep orange-yellow berries of which the local people make no use (unlike their Russianized cousins across the river in Tajikistan).

The main mountain grazing slopes up to over 4 000 m are dominated by perennial species such as *Artemisia, Astragalus, Ephedra, Cousinia,* and *Oryzopsis*, with grasses such as *Stipa* and ephemerals such as *Poa*. The famed Marco Polo 'sedge meadows' or rather 'sedge pastures' on the higher valley flats are dominated by *Carex, Kobresia,* and fescues (*Festuca spp.*). The slopes above 4 800 m have a rich alpine flora including *Thymus, Saxafraga, Aster, Potentilla, Pedicularis, Primula,* and others. (See Petocz and others 1978 for a list of dominant species and plant composition.)

A road was built as far as Sarhad in the 1960s, largely to facilitate access for the authorities and hunting parties. Little, if anything, has been done to improve or maintain it since. Nevertheless, it remains passable

for a four-wheel-drive vehicle in good condition. It has been completely washed away and 'lost' in many places among the innumerable flood washes it has to cross on its way. As in the lower main Wakhan strip, it is seldom closed for long by winter snow, but the valley acts as a conduit for icy winds from the high ranges above. The Wakhan River flows through this stretch of highly glaciated valley in an ever-changing bed characterized by vast and spectacular expanses of gravel flats and stony washes.

The mountains on either side rise for the most part rather precipitously until reaching Sarhad, which lies at the end of a broad basin where the river enters from the Little Pamir out of a series of deep gorges. The broad Broghil (Dekhan Khanah) Valley enters here from the south, leading up and over the high but comparatively easy Broghil Pass (4,288 m) to Chitral. This was the pass that haunted the late 19th century Imperial Britons as being the one through which they feared the Imperial Russian Cossacks, equipped with cavalry and artillery, would come on their way to invade India. It is the only pass in this area where this would have been possible and which was a compelling strategic consideration for British control of Chitral.

The Little Pamir The Little Pamir consists of two main mountain ranges at the eastern end of the Pamir Knot, divided by the Waghjir Valley. The area lies upstream and east of Sarhad-e-Broghil and to the south of the upper Wakhan River, bordering on Pakistan (Hunza and Gilgit) and the Karakoram Valleys to the south, and with China (Xinjiang-Uigur Autonomous Region) to the east. It comprises a high mountainous area with ridges and peaks rising to between 6 500 and 7 000 m, the highest peaks being those along the short Afghan frontier with China.

The Little Pamir is divided into two halves east and west by the Waghjir Valley and Pass (4 850 m) that gives access to Pakistan's Northern Areas-Gilgit and Hunza. Another high pass, the Yuli Pass (4 872 m), leads into China with access to the ancient Silk Road cities of Tash Gorgan and Kashgar. On the northern border, east of Zor Kul Lake the frontier with Tajikistan is marked by a range of glacier-filled mountains, high plateaux, and alpine lakes, which is in effect an extension of the Big Pamir range.

Although the western end of the Little Pamir is used to some extent by transhumance Wakhi herders from Sarhad and upper Wakhan for seasonal grazing, the Little Pamir is mainly the home of the yurt-dwelling, Turkic-speaking Kyrghyz and their herds. Although about 1 200 of the Little Pamir Kyrghyz fled to Pakistan in 1978, later to be settled in eastern Turkey under a UN/Turkish government-assisted programme, some 100 +/- families remain with considerable numbers of grazing animals. (See section 3.8.2 on the Kyrghyz herders and 4.6 on the limitations of the present assessment regarding the Kyrghyz).

The Kyrghyz share the Little Pamir with a population of Marco Polo sheep (some maintain that it is a larger number than that currently found in the Big Pamir), ibex, and other wild animals. Their main trade and commercial outlets are with Gilgit in Pakistan and (it is reported) to a limited extent with Tash Gorgan in China. They are reported to be well-off in terms of herds and flocks, but afflicted by widespread addiction to opium.

In the years before the Soviet War, the Kyrghyz of the Little Pamir were permitted to hunt Marco Polo sheep and ibex for meat. FAO studies undertaken at the time by Petocz and Habibi and others (1978), however, maintained that at that time hunting by the Kyrghyz was at a sustainable level.

2.4 Previous Work in the Wakhan

The Pamir Mountains have been an area of special interest to the Afghan government and international organizations. The focal point of this interest has been the Marco Polo sheep and a trophy-hunting programme of rams that was started in 1968 in the Pamir-i-Buzurg. This resulted in many surveys and studies in the region (for example, Petocz 1973a, Skogland and Petocz 1975). Three reports stand out in presenting a comprehensive description of the status of wildlife and its management in the Afghan Pamirs before the Soviet invasion and have provided a valuable baseline for our work (Petocz 1978a, 1978b, and Petocz and others 1978).

3 OBSERVATIONS AND FINDINGS

3.1 Wildlife Assessments and Species Accounts

3.1.1 Summary of What Was and Was Not Seen

During the present survey, we were able to identify a total of 50 bird species (see Annex 6), of which 10 are new additions to the list of 117 species compiled by Petocz (1978). We could directly confirm the presence of five large mammal species in the Wakhan, including snow leopard, brown bear, wolf, Marco Polo sheep, and Siberian ibex. While the mission did not sight any urial sheep, local information indicated that urial is a commonly sighted species. We did not find any fresh signs of lynx during our survey. Below we present species accounts of the distribution and conservation status of six of the large mammal species identified by the mission.

3.2 Account of Wildlife in the Wakhan and the Big and Little Pamir

- **Snow Leopard (*Uncia uncia*):** We confirmed the occurrence of the endangered snow leopard throughout the Wakhan Corridor. Fresh signs were seen in both the Big and the Little Pamirs. However, we got a clear indication that the stronghold of this species within the Wakhan Corridor may not be in the Pamirs, but in the mountains between Ishkeshem and Qala-i-Panja, and up to a few kilometers further upstream from Qala-i-Panja along the Wakhan River. This area seems very promising for the long-term conservation of the species. However, the snow leopard is involved in an acute human-wildlife conflict in the region by often preying on livestock and being involved in surplus killing, and it faces considerable retaliatory persecution from the villagers (see sections 3.3, 4.3, and 4.4 on human-wildlife conflict and wildlife trade for details).





Snow leopard. Insert: snow leopard tracks in the warwarm valley region

- **Brown Bear (*Ursus arctos*):** The brown bear seems widely distributed in the Big and Little Pamirs. Many herders reported sighting bears as a not uncommon occurance. We saw droppings of adult and young at a summer camp in the Big Pamir, where the animals had apparently come to feed on the unripe barley. The species was not reported to cause any damage to livestock, although observations of them scavenging on livestock carcasses were reported. Bears apparently do not cause any serious damage

to crops either. Herders claimed that they are as much scared of the bears as the bears are scared of them. On the other hand, although hunters do not go out actively seeking bears, it is common for them to take a shot at a bear if one is sighted when they are out on a hunt. Shooting bears seemed to be for no apparent reason except sport. The most recent instance of a bear being shot was reported from the Little Pamir where the *waluswal* (district governor) of Khandud district reportedly killed a bear near a place called Baharak some two weeks prior to our mission.





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Brown bear. Insert: brown bear scat in the Yugpaz valley region

- **Wolf (*Canis lupus*)**: People reported the occurrence of wolves all along the Wakhan Corridor. We found fresh signs of wolf both in the Big and Little Pamirs. In contrast to the snow leopard, the Pamirs seemed to be the stronghold for this species. Both in the Big and Little Pamirs, it is the wolf that is mainly responsible for frequently killing livestock, though the species was not reported to engage in surplus killing (see section 3.4 on human-wildlife conflict).

- **Marco Polo Sheep (*Ovis ammon poli*)**: This species is restricted to the Big and Little Pamirs, and most people agreed that their population might be much higher in the latter area. We sighted two herds in the Shikargah Valley of the Big Pamir. One was a mixed herd of 28 including several lambs on a south-facing middle slope at 4 400 m in the alpine steppe. The rams were apparently still in their summer ranges at higher altitudes. We sighted a herd of six rams near a former hunting camp at 4 700 m in the snow on a small sedge meadow within the alpine zone. We were unable to survey the Marco Polo habitat in the Little Pamir. In the Big Pamir, however, there is an important concern for the species. The wintering areas of the Marco Polo sheep (especially females and young) in the western part face intensive livestock grazing. Not only are the pastures grazed by a high density of livestock (including sheep and goats and a few horses, yaks, camels, and donkeys) throughout summer, but in fact, the herders stay back with their flocks of sheep and goats right through winter. In addition to the possible competition for forage with the Marco Polo sheep in winter, persistent and intensive livestock grazing and trampling here have already caused considerable degradation of the pastures between 4 000 to 4 300 m. The species is also hunted for meat. However, all herders and hunters we interviewed claimed that they have now stopped hunting following a recent directive by President Karzai imposing a ban on hunting wildlife.

- **Siberian Ibex (*Capra ibex sibericus*)**: Of the three wild ungulates in Wakhan, ibex is the most widely distributed species, occurring all along the corridor and in the Pamirs. We sighted herds in both the Big

and the Little Pamirs, where they occur on very steep rocky slopes and cliffs that are interspersed with the more rolling sheep habitat. Two all-male herds were seen in the Shikargah Valley. The first was a herd of five seen on cliffs on a north-facing alpine steppe slope at 4 200 m. Another herd of five adult males was sighted at 4 450 m on a steep east-facing slope. The third herd of ibex in the Big Pamir was sighted in the Warwarm Valley. This was a mixed herd of 25, including 6 kids, seen on a moderately steep, north-facing slope at 4 200 m. In the Little Pamir, we sighted a mixed herd of 16 ibex, including 3 adult males and 4 kids. This herd was spotted by our hunter guide Md. Sabir at close quarters on the Kotal-i-Dalriz Pass, asleep on a rocky terrace at 4 100 m facing across the Wakhan River. Unlike the Marco Polo sheep, ibex apparently do not migrate much across altitude zones, and the much steeper ibex habitat did not seem to be much affected by livestock grazing in the Big Pamir. Villagers and hunters also reported a substantial population of ibex in the corridor area between Ishkeshem and Qala-i-Panja. The species is commonly hunted for meat in both the Pamirs and in the corridor area. A hunter we interviewed had shot two ibex last winter near Qala-i-Panja. A local soldier also admitted to shooting two ibex last winter above Ghaz Khan.

- **Urial Sheep (*Ovis orientalis*):** We did not sight any urial during our survey. However, the species was reported from the Pamir Valley and the corridor area between Ishkeshem and Qala-i-Panja. There were urial horns together with those of ibex on the saint's grave at the Shah Kanda ziyarat near Ghaz Khan.

- **Other Animals:** We saw tracks of red fox, cape hare (Lepus capensis) (we saw one individual), and stone marten. We only heard of lynx, but most of the skins in the Kabul Chicken Street market were said to be from Badakhshan. There were occasional stories of sightings of what is termed locally as the Azada palang or free leopard (possibly a leopard cat), an almost mythical animal credited with having an extra claw in its tail, a story that is believed implicitly! There were ample signs of a large population of long-tailed marmots (they were all underground at this time). These presumably constitute an important food animal for brown bear, snow leopard, and wolf. We also saw evidence of sizeable colonies of voles and other small rodents in places.

3.3 Human-Wildlife Conflicts

The only serious human-wildlife conflict reported was the loss of livestock to wild predators and their retaliatory persecution. People did not report any serious loss of crops to wildlife, or cases of injury by any wild animal (such as brown bears). A single instance was reported where a snow leopard attacked a villager who was out with two neighbours collecting brushwood for fuel on the slopes near Khandud four years ago. This was apparently a very old animal with no canines, and it was hacked to death by the villager's companions.

3.3.1 Livestock Predation

Villagers in the entire Wakhan Corridor seem frequently to lose livestock to snow leopards and wolves. To take a few examples, a wolf was reported to have killed three sheep near a summer camp at Shikargah Valley in the Big Pamir three days prior to our arrival (see Annex 5). Another herder we interviewed in the Big Pamir reported losing three cows ten days before in the Dast-i-Shetwar area. He saw two wolves feeding on the carcasses. In the Little Pamir, near the village of Sarhad, six wolves killed a two-year-old cow at night four days before our visit. In one of the most notable and notorious recent incidents, Ayum Beg lost 70 livestock (including 3 sheep, 3 calves, 2 donkeys, and the rest goats) last winter when a snow leopard entered his corral from a hole in the roof. This was in the village of Wozut in the Pamir Valley. Last winter, people in Khandud and surrounding villages of Yamid, Pugish, and Skhoo together lost about 300 goat and sheep to wild predators. Numerous other instances of loss of livestock to wild predators were reported to us. Of the 15 interviews with individual herders or groups of herders, 12 reported frequent losses of livestock to wild predators. Two groups of herders in the Big Pamir (at Pursan and the Warwarm Valley) did not report any recent loss, and in the village of Nashkow in the Pamir Valley, people admitted to losing livestock once in a while but did not see predators as a serious problem.

3.3.2 Spatio-Temporal Patterns

Results of our interviews suggested important differences between snow leopards and wolves in the spatio-temporal patterns of livestock predation. Wolves were reported to take livestock throughout the year, while most cases of snow leopards' killing livestock were reported in winter. All wolf kills were reported from the open mountain pastures or from near settlements where the livestock were penned out in the open. On the other hand, most snow leopard attacks involved instances of the animal's entering a corral or stable. Consequently, unlike the wolves, the snow leopard attacks were reported to result frequently in excessive surplus killing of livestock. Wolves were seen as the main problem animal in both the Big and the Little Pamirs, while the snow leopard was seen as the main problem in the corridor area between Ishkeshem and Qala-i-Panja, up to a few kilometers upstream from Qala-i-Panja along the Pamir River.

3.3.3 Retaliation

The snow leopard faces the brunt of people's retaliation against livestock predation in the Wakhan. From our interviews, we documented a total of ten instances of snow leopards' being killed, of which the most recent one was earlier this year, when a snow leopard was hacked to death in a corral in Ghaz Khan (see Table in Annex 3). An additional seven instances were reported within the last five years. Of these ten instances, five snow leopards were killed inside corrals. In four of the five instances, the sex of the snow leopard was known-two males and two females. In two instances, there was no immediate provocation; the snow leopards were shot after being sighted by hunters out on hunts.

3.3.4 Wildlife Trade

In all ten instances of snow leopard killing that we recorded in the Wakhan Corridor, the hunters skinned the carcass for fur but discarded the rest of the body parts. The furs were sold in most cases, with prices ranging between an equivalent of less than US$15 up to US$140 (see Annex 5 Wildlife Anecdotes). Most



Snow leopard skin in Chicken Street fur shop, Kabul

furs were sold to itinerant traders. These were not fur traders as such, but regular visitors who generally bring household goods that they barter with the local people in exchange for livestock, butter, *kurut* (dry yogurt), and so on. At the present time, the trade in wildlife furs at the local level in Wakhan Corridor is at best casual. We found no evidence of local people hunting with the specific objective of catering to trade. Most local hunting is for wild sheep and ibex and for meat. Snow leopards are killed mainly in retaliation against livestock predation; indeed. However, as already mentioned, when such instances do take place, the skin is usually preserved and sold to passing traders. This was further confirmed by the total absence of any wildlife trade in the Ishkeshem market. In fact, we did not find any evidence of serious trade in wildlife even in Faizabad market. The only wildlife traded there was the chukar partridge, which is a common cage pet as well as a bird that is kept for fighting. Observations made at other seasons have found a local trade in songbirds in the spring, and we heard rumours of a trade in falcons to the Arabs of the Gulf Emirates and Saudi Arabia through Pakistan. On the other hand, our survey of the Chicken Street market in Kabul suggests that a growing and very lucrative and serious fur trade is being carried on in Afghanistan. There are five or six shops that exclusively deal in wildlife furs, and an equal number that deal in furs in addition to goods such as carpets and handicrafts. The main species of large mammals whose pelts are being traded are the common leopard, snow leopard, wolf, lynx, and fox (see Table 1 in Annex 5).

In terms of the number of skins on display, lynx and wolves were very common, followed by common leopard, foxes. Amongst the large cats, the highest turnover in the number of skins was reported for lynx (see Table 1 in Annex 5). Furs of several other species such as striped hyena (*Hyaena hyaena*), otter (*Lutra sp.*), stone marten, polecats, minks, and small wildcats were also seen. Interviews with the traders revealed that the main buyers presently are foreigners, mainly the soldiers of the international security forces, who can avoid customs checks; but there are others as well. In the Wakhan Corridor, we had learned of one instance where a senior UN international staff member bought two snow leopard skins two years back and had them stitched into a coat (see Annex 5, Wildlife Anecdotes). The means of obtaining the furs is variable. Some shopkeepers go on their own or send their workers to places such as Badakshan, Panjsher, Nuristan, Herat, and other areas to buy furs. Others just buy them from visiting traders who bring the furs to Kabul. On sale are furs or products (which can also be made to order) such as coats, bedspreads, hats, and so on.

3.4 Area Accounts and State of Pastures, Wetlands, and Forests

3.4.1 Rangeland and Pastures

We were able to make out best observations of the state of the Pamir Mountain grazing on the six days we were riding and walking in the western valleys of the Big Pamir, between Ghaz Khan and the Ishtemich/ Shikargah Valley complex. The botany of the Big Pamir has already been well described in the works of Petocz and others in the 1970s. On the Big Pamir part of the mission, we walked and rode up through three main pasture/grazing zones from 3 200 m up to just under 5 000 m toward the head of the Shikargah Valley. As a generalization we found the lower elevations of mountain grazing, 3 200 to 4 000 m, to be in better condition and less degraded than the intermediate highland zone between 4 000 m and 4 400 m elevation, except along the main 'drove road' up the Pamir Valley, where the ground is much trampled.

Most of the 3 200- to 4 000-m zone in the northwestern Big Pamir lies along a north-facing slope looking across the deep gorges of the Pamir River to the main massif of the Pamirs on the Tajikistan side. Being a north-facing slope, the snow tends to cover it in early winter and stays on till spring thereby providing protection to the pastures during the winter months. The steep mountain slopes alternate with high terraces or '*dasht*' and are dominated by woody species such as *Artemesia*, with *Ephedra, Cousinia*, a number of spiny pincushion forbs, *Astragalus, Echinops*, and members of the thistle family; and in places a seasonal undercover of ephemerals such as *Poa*, as well as areas of perennial tussock grasses, *Stipa sp*, and *Festuca* are common on some slopes.



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Sheep and goats on the main drive road in the Pamir Valley



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Artemisia steppe in the Pamir valley

We found the middle zone in the Ishtemich/Shikargah Valley between 4 000 m and 4 400 m to be the most seriously degraded, although not yet to an irredeemable degree. Woody species such as *Artemisia* still dominate, but the grazing pressure is much greater and, as things are being practiced at present, this middle zone is not being given any seasonal relief. This level in the valley, although high, is reasonably free of snow during the winter. The herdsmen's families leave sometime in early October to return to their settled villages in the eastern Wakhan together with certain categories of stock such as male yaks. Female/pregnant yaks and a proportion of young male lambs are sent east up the Pamir Valley to be herded by the Kyrghyz for the winter, but the majority of breeding ewes and goats remain in the Ishtemich Valley over winter guarded by professional shepherds, unless driven down by very severe weather. We estimated that there may be as many as between 900 and 1 000 head of sheep and goats being herded between the main Ishtemich Valley, the lower Shikargah, and the Khoshabad side valley, of which possibly two-thirds are spending the winter in the valley. Discussing the matter in Kabul with Dr Petocz, it appears that this must be a comparatively new practice, or a revival of an older one, because in the 1970s, when the area was a reserve, no Wakhi livestock were grazed in the Big Pamir at all. We think that that this twelve-month occupation of the middle elevations in the Ishtemich Valley is depriving the Marco Polo sheep of their traditional wintering ground, especially when the rams and ewes come together in the rut in December and January.



Species of pin cushion thorn

ANTHONY FITZHERBERT

Above the 4 400-m contour in the Shikargah Valley is classic Marco Polo sheep country, where the domestic herds and flocks spend very little time. This is a zone of typical high alpine flora and the famous 'sedge meadows' referred to by Petocz and others in their 1970s studies, dominated by *Carex* and *Kobresia* as well *Festuca*, with a rich alpine flora on the slopes including *Thymus*, *Aster*, *Potentilla*, *Pedicularis*, *Primula*, and *Saxafraga*. This is the summering ground for the Marco Polo rams, and this is exactly where we found them. (Note some reports, for example, Petocz and others 1978, describe some of this high alpine area as being 'alpine heath', but this is misleading, as in Britain at least, 'heath' refers to areas dominated by heather; that is, Erica and related species, which this is not.)

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CHARUDUTT MISHRA

Yaks in Ishtemich valley



ANTHONY FITZHERBERT

High alpine flora favoured by Marco Polo sheep

In the area of Sarhad as observed by the mission in the Broghil (Dekhan Khanah) Valley and on the Delriz Pass, pastures are in reasonable condition and do not suffer twelve-month grazing pressure. The Broghil Valley is well-blessed with sedge/fescue pastures and tussock grass. As the livestock do not stay up in these areas in their aylaq over winter, this gives some peace and quiet for the wild ungulates if hard weather forces them downhill. The Dalriz Pass is mainly dominated by Artemisia and other woody species.


ANTHONY FITZHERBERT

Pasture conditions in the Dekhan Valley

3.4.2 Wetlands

The Wakhan and the Pamir do not contain the most noteworthy wetlands in Afghanistan. However, a number of interesting birds do use the upland rivers and lakes as their breeding ground, including the bar-headed goose (*Anser indicus*), the ruddy shelduck (*Tadorna ferruginea*), and the ibisbill (*Ibidorrhyncha struthersii*). These birds had already left the high mountains by the time of the mission's visit. A number of marshy '*chaman*' pastures characterize the flats along the main Wakhan Corridor, used as common grazing by the village herds and flocks. In season these marshy '*chaman*' are home to a number of wading birds, sandpipers, plovers, and pratincole. These marshy flats, small oxbow lakes, and floodwater flashes along the Wakhan River also act as resting points for the ducks, cranes (*Grus grus and Anthropoides virgo*), and other waterfowl that use the Wakhan Valley as an autumn and spring flyway. Again, the mission was too late to view either this or the migration of raptors that use the same corridor. What we saw was only a handful of stragglers.

The Wakhan contains the headwaters of numerous rivers and streams that feed into the Amu Darya. There has been much discussion concerning generating hydroelectrical power through the damming of these rivers. While there is certainly great hydroelectrical potential in these mountains, it will be extremely important to perform environmental impact assessments of any such development projects prior to their implementation to determine their effects on the local ecology, nearby communities, and downriver flows.

3.4.3 Forests

Most of Wakhan and the Pamirs are too high and bleak for forest cover, but there is a fringe of scrubby tree cover along many parts of the river line, mainly consisting of willow (*Salix*, at least two species), birch (*Betula*, one species), wild rose (*Rosae*, two or three species), *Berberis*, sea buckthorn (*Hippophae rhamnoides*), wild currant *Ribes*, (one species), *Myricaria germanica* and others. These provide good nesting sites for a number of passerine birds and a refuge while on migration as well as cover for game birds such the ubiquitous chukar partridge (*Alectoris chukar*). These riverine thickets are also reported to be a source of autumn feeding on the berries for the brown bear population. Apart from firewood and some construction timber, the human population does not appear to make use of these trees or of the wild fruits and berries, which because of the Russian influence are used to some extent by the rural population across the frontier in Tajikistan.



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Riparian vegetation along Pamir river

3.5 The Soviet Intervention and Its Aftermath

National development in Afghanistan was brought to an end first by the bloody coup d'etat in April 1978 (The Saur Revolution) in which Afghanistan's then ruler Daud Khan and his family were murdered and power taken by the Khalqi (Communist) faction leader Nur Mohammad Taraki. This was closely followed in 1979 by the assassination of Taraki by his rival Hafezullah Amin, leader of the Parchami (Communist) faction, and later in December 1979 by the direct intervention in Afghanistan by the forces of the USSR and the ten years of bloody conflict that followed. The departure of the Soviet forces was followed by a continuation of the civil war first between the combined resistance forces of the mujahideen and the surrogate Afghan communist government of Dr Najibullah (1989 to April 1992), and then by the subsequent internecine fighting between the different mujahideen factions, the forces of the Uzbeq General Dostom, and others. This led directly to the rise and consolidation of the power of the Taliban from late 1994 until their rout by the International Coalition forces, aided by the Badakhshan/Panjshir-based Northern Alliance between November 2001 and January 2002, which in turn led to the establishment of the present government headed by Hamid Karzai.

In the meanwhile, starting in 1999 and continuing in many parts of the country, Afghanistan has been subjected to a severe drought, which has seriously affected both settled agriculture and seasonal herding throughout much of the country. The drought has also seriously and adversely affected not only grazing lands but natural wetlands, some of which had been designated as protected areas prior to the Soviet War of 1979 to 1989.

One of the main purposes of this mission to the Wakhan and the Pamir, as with the other UNEP missions, has been to make a preliminary assessment of the effects of war, civil conflict, and the breakdown of civil institutions on the wildlife and environment of this area, placing initial emphasis on the Big Pamir, which is an area specially designated as a National Park Reserve immediately prior to the Soviet intervention in December 1979.

Compared to many other parts of Afghanistan, the Wakhan and Pamir areas have remained distant and removed from the main arena of conflict and politics. This has been fortunate for man and beast alike, although the years of conflict have done much to deepen the region's natural isolation and remoteness, as well as giving the rural population access to lethal weapons, which they never previously had.

3.5.1 The Flight of the Kyrghyz in 1978

One of the first and most dramatic events in the Wakhan Corridor occurred in 1978 in the months following the Saur Revolution and the assumption of power by Tariki's communist government. Fearing collectivization, Rahman Gul Khan, the leader of the Little Pamir Kyrghyz, led some 1 200 of his people, the Kyrghyz of the Little Pamir, together with their flocks and herds over the Waghjir Pass to Gilgit in Pakistan. Their self-imposed exile was further entrenched by the Soviet invasion of December 1979, who discouraged their return fearing that they might become a conduit of arms from China to the *mujahideen*. In Gilgit the tribe were compelled to sell their livestock. In 1983, after much discussion of various options, including Alaska, the Turkish Government agreed to give these Kyrghyz refugees a home in Turkey, their being a Turkic people. They were airlifted by the United Nations to Turkey and settled near to Lake Van in eastern Turkey (a region incidentally inhabited by an almost 100 per cent Kurdish-speaking population, who are reported to have greeted this settlement with resentment (Ref. M. Nzif Shahrani. *The Kirghiz and Wakhi of Afghanistan.* University of Washington Press, updated September 2002). A number of these families are reported more recently to have resettled again in Kyrghyzstan. (See section 3.8.2 on the Kyrghyz.)

3.5.2 Those Who Stayed or Later Returned

A remnant of Kyrghyz families stayed on in the Little Pamir, and the Kyrghyz of the Big Pamir did not migrate and over the past 24 years appear to have multiplied both themselves as well as the flocks and herds that remained with them. They have also been rejoined by some 35 families who had remained as refugees in Pakistan and had not gone on to Turkey. Unfortunately, we had no time to visit the Kyrghyz of the Little Pamir, but all local accounts describe them as being a generally prosperous herding community at the present time. Their titular leader and nephew of the late Rahman Gul Khan, Efendi Bay, lives in Bozoi Gumbaz and is said to own at least 10 000 head of stock of all kinds (not perhaps to be taken literally, but meaning '*very many*'). There are reported to be about 100 +/- Kyrghyz families living in the Little Pamir at the present time. Opium addiction is reported to be a social problem, at least among the Kyrghyz of the Little Pamir

The extent of competition or interference between the Kyrghyz and their herds and the wildlife of the Little Pamir, especially Marco Polo sheep and species such as snow leopard, is not known. However, again general opinion among those we spoke to who know both areas well suggests that a larger population of Marco Polo sheep inhabit the Little Pamir at the present time than the Big Pamir, despite grazing pressures and the hint of Kyrghyz hunting as well.

3.5.3 Wildlife Under the Soviet Occupation and the Post-Soviet War Era

Immediately after their intervention in Afghanistan in December 1979, the USSR established a very commanding position in all the northern border areas. They occupied Badakhshan and established strong military bases at places such as Zebak, Ishkeshem, and all along the Wakhan Corridor. Strong military posts were established at Sarhad and up the Broghil Valley by the Zartgar Lake, commanding the pass across to Chitral. To all effects and purposes, Wakhan was incorporated into the security of Tajikistan and never became (nor needed to become) a very easy ground in which the mujahideen groups could operate. Neither the Broghil nor the Waghjir passes became serious conduits for arms from Pakistan, as did the Shah Salim/Top Khaneh/Garm Cheshmeh route from Chitral, which was successfully used to arm Ahmad Shah Massoud in the Panjshir. The Shah Selim route operated successfully despite the Soviet garrison stationed at Zebak.

At one stage in the war it was rumoured on good authority that the USSR was seriously contemplating fulfilling Russia's 19th century dream, frustrated by the British, of annexing the whole of the Wakhan and Pamir region of Afghanistan to the Soviet Union. It is said that the death of President Brezhnev and the rise to power of Gorbachev and the reformers prevented this happening.

The net result of the tight Soviet control on the area was generally not a negative one either for the wildlife or for the local population. According to our Wakhi informants, the local population, at least, do not seem to have been mistreated by the Soviet soldiers. Indeed they benefited from being kept out of the war, and by being aided by some rough 'hearts and minds' work in the form of free handouts of food and clothing. These were carried out at the various frontier posts and bridges constructed across the river by the Soviets at Ishkeshem, Prip (near Ghaz Khan, upstream of the Pamir/Wakhan confluence), and at the Zor Kol border post in eastern Big Pamir. This is remembered well by the local population with whom we spoke. The Soviets, (no doubt in their own strategic interests) also assisted the population of the upper Wakhan Valley by constructing a series of metal girder bridges across the river between Qala Panja and Sarhad, giving greater access for the villagers of the area across the river. Such bridges exist at Syst, Sargaz, Kyryt, and Rookut.

3.5.4 The Soviet Occupation-Protection for Wildlife

In respect to wildlife and hunting during the Soviet occupation, we expected to be told of wholesale slaughter during the time of the Soviet occupation, but in fact were heard a very different story. As we were told this same story in a number of different places, it would seem to have some authenticity.

In Sarhad-e-Broghil, where there was a strong Soviet military presence for ten years from 1980 until the final withdrawal of Soviet forces in April 1989, everyone agreed that the Soviet troops and officers had been under tight discipline, and no hunting was permitted. Indeed the local hunters, in fear of being mistaken by the Soviets for *mujahideen*, did not go hunting. As a result the ibex and urial sheep apparently lost their fear of people, often being seen close to the settlements and the herding camps and *aylaq*. They appear to have become accustomed to the noise and confusion of helicopters and of firing practice and military vehicles travelling up and down the road.

3.5.5 The Withdrawal of the Soviets-A Hazard for Wildlife

Apparently all this changed after the Soviets withdrew, leaving power in the hands of Dr Najibullah's government. The Soviet garrison was replaced by a poorly disciplined border force from the Najibullah government, and quite a bit of killing of game animals appears to have taken place at that time, largely for meat to feed the soldiery.

Before 1992 the Najibullah forces retreated, and a border garrison from the forces of the Shura-e-Nazar lead by Massoud took their place. They in their turn also seem to have done some hunting to help feed themselves.

Local opinion, in Sarhad at least, is that although there are still quite large numbers of wild game (ibex as well as urial) in this part of the Wakhan Valley, they no longer see them as close to the settlements as they once did. Two reasons are given: the hunting disturbance between 1992 and 1996, and more recently, very open winters without much snow to force the animals down to the lower slopes of the mountains.

One villager recollected seeing camel-loads of carcasses coming down from the Little Pamir, killed by the Kyrghyz in the mid-1990s to feed the Shura-e-Nezar troops. The present border force appears to consist of one officer and three or four men, hardly a garrison. We gave a lift to the officer from Ishkeshem to Qala Panja. Hunting does not seem to be on their agenda.

3.5.6 The Detritus of War

As there was no active war in the Wakhan area, there are no minefields. However, on actual sites of the Soviet garrison camps, there is a lot of junk in the form of tangles of loose wire, rusty tins, and the like, which can be a menace to the local livestock. In Sarhad there were complaints of wandering cattle and other animals that got themselves tangled up in wire left by the Soviet garrison around the lakeside at the Zart Kol *aylaq* when they go to drink. However, no one seems to have taken the initiative of clearing up the junk. Some of the 'junk' has undoubtedly been of great use to the local population. Pine beams and boarding taken from the old Soviet posts have been used extensively for village houses, and barbed wire taken from the protective fencing has been used to patch many miles of 'Heath Robinson' telephone line between Sarhad and Khandud.

On the whole the Wakhan and the Pamir escaped the worst direct effects of the years of war, and the population has also fortunately largely escaped the dreadful type of internecine conflict that has bedeviled so many other parts of the country. True enough, as everywhere else, it has not been difficult for the local rural population to acquire arms such as the ubiquitous AK-47 Kalashnikov, all rather more deadly that the usual '*mush kush*' or 0.22 rifle, which was previously the normal rural armament. However, since the Karzai government came into being, the general call to hand in weapons appears to have been taken seriously in the Wakhan this summer, at least among the Wakhi population, who are a naturally law-abiding and peaceful people. Everywhere we went we heard that arms had been handed in, and that the Wakhi would be obeying Karzai's ban on hunting. This information came spontaneously from the people themselves, as we had not heard about it prior to our mission. We suspect that the strong influence of the Aga Khan programme in the area has also had a beneficial effect in this respect.

However, we did find cheap Iranian-made, single-barrel shotguns readily available and for sale at the equivalent price of about US$45 in ordinary grocery stalls in the Faizabad bazaar. These are mainly used by the local population for shooting chukar partridge and other small game such as hares, but loaded with ball or heavy shot they can of course be used to shoot larger animals.

We cannot say for certain what the arms situation or the adherence to the hunting ban is among the Kyrghyz, but the inference is that it might not be quite so effective there, so far from the eye of authority.

3.6 Socio-Economic Profile, Food Security, and Social Issues

3.6.1 Poverty and other Social Issues

The agricultural economy of the settled areas of the Wakhan is based on subsistence agriculture. Such surpluses as there are to sell come from their herds and flocks. This applies specifically to the Wakhi population.

The Kyrghyz population in the eastern Big Pamir and in the Little Pamir are yurt-dwelling herdsmen and have no cultivated land to speak of. The Kyrghyz in the Big Pamir are said to be less well-off than those in the Little Pamir, who are said to own large flocks and herds of yaks and camels and are popularly considered by the

Wakhi population all to be 'Bay,' that is, rich men. However, as we were not able to get to meet them ourselves, we cannot say how these flocks and herds are divided and what disparities in wealth exist within the Kyrghyz society. Certainly, among the Wakhis it is clear that although most families appear to own a few cattle, sheep, and goats, some families are more specialist herdsmen, owning sizeable flocks as well as small herds of yaks. Such were the herders with whom we stayed in the Ishtemich Valley in the Big Pami. These families own sizeable flocks as well as yaks, horses, donkeys, and Bactrian camels.

The whole of the Wakhan region has for a very long time been characterized by chronic rural poverty, food insecurity, isolation, and a lack of almost all social facilities such as education and health care.

3.6.2 Food Security

Although the rural people practice a rather sophisticated agriculture combined with livestock husbandry (see sections 3.7 and 3.8 on agriculture, farming, and herding systems) appropriate to their harsh environment, they also find it difficult to produce sufficient grain to last from one harvest to the next. This was Fitzherbert's third mission to the area (to the main Wakhan strip, at least), so the area and its farming systems were already familiar.

Both these earlier missions were carried out during the 'hungry months' running up to harvest. It is often forgotten that the winter months follow shortly after the wheat harvest, which in the Wakhan is not until late September or early October, and that these are not necessarily the months of greatest food shortage. Spring and summer before the harvest can be serious months of food deficit.

Due to interventions by the Ismaili NGO, FOCUS, now incorporated into the Aga Khan Development Network, the situation is now much improved compared to what it was in the mid-1990s. In the last year or two, much has been done to fill the hunger gap with food aid and food-for-work projects.

At the time of the mission, the wheat and pulse harvest was in full swing all up the length of the Wakhan Valley as far as Sarhad-e-Broghil. The higher-elevation barley crops had already been harvested. Gener-



ANTHONY FITZHERBERT

Wheat sheaves waiting for threshing in the Wakhan valley

ally, the harvest did not look bad, although farmers, as everywhere, were being cautious about predicting their yields until they had completed threshing. Little if any chemical fertilizer is used here, and there was little evidence of any recent successful introductions of improved, better-yielding varieties. In fact, farmers spoken to in four different villages in the main Wakhan strip complained that recent introductions of 'improved' wheat seed (*tokhm-e-islahi*) by FOCUS had not been a success.



Man winnowing wheat in Wakhan valley

The general response was that they would probably get a return on the wheat seed they had sown of at least 5 to 1 and possibly more. One man in Sarhad thought he might even get as much as 10 to 1, but that was exceptional. This would put yields at between 1.5 and 2.0 tonnes per hectare. (It should be noted here that Afghan farmers, generally, do not calculate yields on an area basis; that is, tonnes per jerib or tonnes per hectare, but rather on a harvested return on the seed they have actually sown.)

Most farmers we spoke with considered that their wheat and pulse crops would be sufficient to feed their family for between six and seven months. In order to get additional grain, they would need to sell livestock or rely on AKDN/FOCUS to help fill the shortfall. When we returned to Faizabad, we had a meeting with the FOCUS team, who confirmed that their survey findings estimate that an average agricultural family in the Wakhan has a potential seven- to eight-month grain deficit most years. This year is likely to be marginally better than last.

3.6.3 Other Social Problems

In addition to food insecurity, the population of the Wakhan has a multiplicity of social problems associated with chronic rural poverty. One of the most intractable is chronic opium addiction, which affects all

ages and both sexes, almost exclusively among the Ismaili population of Wakhis and Shegnanis living along the frontier, though addiction is also reported as a problem among the Kyrghyz of the Little Pamir, who are Sunni Moslems. In the opinion of the very experienced drug addiction consultant with extensive international experience, who visited Zebak, Ishkeshem and the Wakhan on the UNDCP mission together with Fitzherbert in 1995, he had never before met any human community so completely addicted and dependent on the drug as part of their survival mechanism. It should be well noted here that opium poppy is not cultivated as a commercial crop in either Wakhan or Pamir, although occasional plants may be found in kitchen gardens 'for medicinal purposes.' The drug comes from other districts in Badakhshan, where it is produced as a commercial crop by Tajik and Uzbeq farmers, who are Sunni Moslems and do not use the drug themselves.

The situation is not a new one and has been a social problem going back at least 100 years or more. Nonetheless, the situation was almost certainly exacerbated by the increased isolation caused by national conflict and by the increase in opium production in other districts of Badakhshan by the Tajik and Uzbeq farmers.

The cycle of poverty, illness, lack of medical facilities, hunger, and addiction is complicated, and all the factors feed on and support the others. Breaking the vicious cycle is extremely difficult. Various NGOs, in particular the Norwegians, have in the past supported detoxification clinics in the area, and the Aga Khan's programme intends to deal with the issue as well. Certainly the Aga Khan has himself expressed his strong disapproval of addiction. It is to be hoped that this has not just helped to push the problem underground. We certainly found great disinclination by villagers to admit addiction, although many were showing clear indications of the results in the form of emaciation and constant complaints of headaches and stomach-aches. Sufficient here to report that that the problem is well recognised, the intention to address it has been firmly stated by the Aga Khan programme, and it would require a more specific survey to report more accurately on the current situation and how it compares with six or seven years ago.

On inquiring about the situation regarding opium addiction among the Kyrghyz, most people spoken to agreed that there is addiction among the Kyrghyz of the Little Pamir. The Kyrghyz of the Big Pamir, who are said to be poorer than those in the Little Pamir, are reported not to be addicted to opium, at least to the same extent.

3.6.4 Health and Education

Another associated problem that afflicts the people of the Wakhan is Lathyritis-the irrevocable paralysis of the lower limbs caused by the excessive consumption of grass pea (*Lathyrus sativus*). It is to be hoped that the FOCUS feeding programme will help prevent this in future. Other chronic problems are goiter and T.B. in addition to more general problems of malnutrition and dysentery.

Although there are no resident doctors in the Wakhan, there are now regular visits by doctors working for the aid agencies. UNICEF has a strong presence in the Wakhan and carries out a vaccination programme.

Both AKDN/FOCUS and UNICEF are paying attention to education. UNICEF school tents were observed in a number of villages all the way up the Wakhan, and education is high on the priority list of the long-term Aga Khan programme.

Whereas education among the settled Wakhi population is now receiving attention, that of the Kyrghyz appears to be totally ignored. In the case of the Kyrghyz, extreme remoteness was stated as a barrier to education. Added to this is the fact, that as with the kuchi nomad population in other parts of Afghanistan, no Afghan government or aid agency has been able to come up with a plan for dealing with the education of people who live in tents (in this case yurts) in small herding family groups, and who are constantly on the move following seasonal grazing.

3.6.5 The Role of the Aga Khan Development Network

The Aga Khan, as the leader of the international Ismaili community, feels a strong obligation toward his impoverished followers in northeastern Afghanistan as he does towards those living in Gorno Badakhshan in Tajikistan and in the Northern Areas and Chitral in Pakistan. The Wakhi population of the Afghan Wakhan and the Big Pamir are mainly Ismailis, while the Kyrghyz are Sunni Muslims. Both have been recipients of FOCUS food aid. Initial assessments were carried out in 1998, and since then the Ismaili NGO FOCUS has conducted a food aid programme, which is now moving into a long-term, integrated, community-based rural development programme. They are effectively the only major non-UN aid agency operating in the area. In certain spheres such as medicine, they are also associated with other NGOs.

From the UN, UNICEF has a presence and is involved with assisting education and child vaccination. WFP has provided food for work for such things as road construction implemented by FOCUS.

AKDN/FOCUS have the intention for a long-term, multisectorial, integrated rural development programme for the whole of this region. This includes agriculture livestock husbandry as well as education, health, infrastructure, and so on, based very much on the model established Pakistan Northern Areas Aga Khan Rural Support Programme (AKRSP) on community participation and decision-making based in Gilgit and now also being developed across the river in Tajikistan for the last ten years. As in these aforementioned areas, it aims to assist all the people of the area regardless of ethnic or linguistic grouping or religious persuasion.

As in Tajikistan and Pakistan, it is the AKDN principle to provide assistance to all people of an area they are working in, not only the Ismaili part of society. On this basis they have been providing assistance and food aid to the Kyrghyz as well.

3.7 Agriculture and Cropping Systems in the Wakhan

3.7.1 The Wakhis

The Wakhi peoples of the Wakhan Valley are both settled farmers and livestock owners, with at least part of most communities involved in transhumance herding. They use the surrounding mountains, whether the eastern Hindu Kush ranges along the main Wakhan strip or the western parts of the Big and Little Pamir, for seasonal grazing, or even, as we found, herding their flocks on parts of the mountains for twelve months of the year.

Agriculture is carried out wherever there is sufficient level and cultivatable soil along the river terraces and wash fans where side streams come out from the mountains. Much of the ground is stony or covered with alluvial boulders that must be painstakingly removed before a crop can be grown. Many villages live in constant danger from flash floods. Wheat is the main cereal crop along the whole of the Wakhan Corridor from Ishkeshem east to Sarhad-e-Broghil at the western end of the Little Pamir. There is little agriculture practiced in either of the main mountain blocks of the Big or Little Pamir, but some highland herding camps, or aylaq, grow crops of barley. The mission found wheat crops being cultivated as high as 3 400 m in Sarhad. Barley was generally being cultivated above that up to between 3 500 and 3 600 m.

All crops in this area are irrigated, at least to some extent, and rain-fed (lalmi) farming is not practiced as in lower/western Badakhshan. The topography and soils are not suitable.

3.7.2 Cereal/Pulse Rotation

A simple but quite sophisticated cropping system is traditional throughout this region. This features wheat and barley with a variety of pulses that are cultivated in rotation with the cereals. These include broad

Executive Summary

The Wakhan Corridor is a narrow panhandle of alpine valleys and high mountains that stretches eastward from the province of Badakhshan following the head waters of the Amu Darya River to its sources in the Pamir Mountains. It borders Tajikistan to the north, Pakistan to the south, and China to the east. It is more than 200 km long (east to west) and between 20 km and 60 km broad (north to south), covering a total area of about 10 300 km^2. This includes the easternmost ranges of the Hindu Kush and the southeastern most ranges of the Greater Pamir range to a point where they join the Karakorums. The corridor was established as an imperial buffer zone in the late 19th century. The Wakhan, including what is known as the Pamir Knot, is an area of unique interest both from the point of view of its environment and biodiversity as well as its human population of settled Wakhi farmers and transhumance herders, the yurt-dwelling Kyrghyz. The Wakhan is divided into three geographical sections-the main Wakhan strip between Ishkeshem and Qala Panja and the Pamir Knot, which is made up of two blocks of high mountains; the Pamir-e-Kalan or Big Pamir; and the Pami-e-Khord or Little Pamir.

This report has been prepared by Mr Anthony Fitzherbert, on contract to the Food and Agriculture Organization of the United Nations (FAO) and Dr Charudutt Mishra of the International Snow Leopard Trust (ISLT), who together with Mr Assadullah Khairzad of the Afghan environmental non-government organization Save the Environment of Afghanistan (SEA) undertook this mission to the Wakhan. The mission was commissioned by the United National Environmental Programme (UNEP), as one of five missions visiting a selection of environmentally important locations in Afghanistan with purpose of making an initial post-conflict environmental assessment. Emphasis was placed on visiting the Big Pamir because in the late 1970s that section of the Wakhan had been designated as a National Park and an area of special interest and conservation management, due to its unique wildlife, in particular the famous Marco Polo wild sheep (*Ovis ammon polii*). The area is also home to other mountain ungulates such as Siberian ibex (*Capra ibex sibericus*) and predator species such the snow leopard (*Uncia uncia*), the brown bear (*Ursus arctos*), the grey wolf (*Canis lupus*), the fox (*Canis vulpes*), and the lynx (*Lynx lynx*).

The mission took place between 19 September and 13 October 2002 (including travel time). During this time, the mission spent three full days in Kabul and three full days in Faizabad, during which time preparations for the field mission were made and both pre-mission and post-mission discussions were held with various stakeholders, including government officials, United Nations agencies, and non-government organizations (NGOs). Time was also devoted to investigating the markets and bazaars where furs and other wildlife products from the region are traded. Fourteen days were spent in the field travelling through Badakhshan, the Wakhan Valley, and in the Pamir Mountains. Twelve days were spent in the Pamir Mountains travelling, where roads exist, by four-wheel-drive vehicle, and where they do not, on foot or by horse, camping and staying with herding and farming families in their camps and villages.

The main reference information for the area and its wildlife was drawn from work carried out in 1970s by Dr R. Petocz and others working under the auspices of the FAO. One of the consultants, Anthony Fitzherbert, was already familiar with the western part of the main Wakhan Corridor, although not with the Pamirs themselves, from previous agricultural missions in 1995 and 2000, and was able to draw on the knowledge gained during those missions. He is also familiar with the Tajikistan Pamir region (Gorno Badakhshan) to the north of the Amy Dariya / Panj / Pamir river and with Pakistan (Chitral and the Northern Areas) to the south of the Wakhan. Inquiries were based on semi-structured informal interviews, discussions, and conversations held with the herders, farmers, and hunters with whom the mission stayed, traveled, and visited in their herding camps and villages. These were backed up by direct observations made in the field. Inquiries and observations not only included wildlife and environmental issues, but also socioeconomic issues, including the herding and agricultural practices and systems of the area visited. Unfortunately, the mission had been not allowed sufficient time to travel as far as the Kyrghyz herding population who inhabit the eastern Pamir Mountains. This omission must be corrected on any future mission, and adequate time allowed.

beans (*baghala*), grass pea (*patak*), and field peas (*myshyng*). Some millet, or *arzan* (*Panicum miliaceum*), is also cultivated, as are potatoes and onions to a limited extent in household vegetable plots. In such a food-deficient area, all pulses and grains are consumed by the human population, with the straw and stover being consumed by the livestock during the winter. Note has already been made of the dangerous effects of consuming too much *Lathyrus*, particularly when the individual is in a malnourished state.

There is no autumn sowing in the Wakhan. All wheat, barley, and pulses are cultivated in the spring, starting in the Afghan month of Saur; that is, late April through May into early June. The wheat harvest is during Mizan; that is, from the second half of September through to early October. There is no mechanization at all, cultivation being carried out with oxen, threshing by oxen and donkeys, and reaping and winnowing by hand. Some mechanization, including mechanical threshing, can now be observed in the lower Badakhshan districts from Warduj through to Faizabad and beyond, but it has not yet moved into the Wakhan.

Wheat is usually cultivated in a wheat-pulse-wheat rotation, sometimes alternated with millet or potatoes. In the higher areas where barley is the sole crop, it is cultivated in a barley-fallow-barley rotation.

3.7.3 Wheat Improvements

Inquiries throughout the Wakhan from Sarhad to Ishkeshem indicated that there has been some impact from the introduction of improved wheat varieties in the lower end of the valley toward Ishkeshem, in the past, when the British NGO Afghanaid had an agricultural station and variety trials in Ishkeshem in the mid-1990s. There does not appear to have been much by way of successful new introductions in the last year or two. In four villages between Qala Panja and Ishkeshem, farmers to whom we spoke complained of getting wheat seed from FOCUS in 2001 of the now outdated variety Ataya 85, but that it had performed worse than their own wheat. They had not received any seed this season, at least in those villages where we made this enquiry. We were informed that FOCUS will now concentrate on food aid and that agriculture will be part of the Aga Khan Development Network programme. More attention will now be paid to improving crop production in the area under the AKDN programme. The FAO programme has a number of promising selected varieties in its current programme from which on-farm trials might be drawn, particularly of cold-tolerant, winter-hardy varieties suitable for autumn sowing.

The wheat being cultivated in Wakhan is mainly of two types, both with awns. One type has quite short straw with smaller reddish grain and is known by the name of sorkha, and the other, slightly taller and with a whitish plumper grain, is known as sefida. Both are purely generic terms for red and white and are not named varieties, although they may owe their origin to earlier introductions of selected material. The barley that we saw being cultivated up on the aylaq was all six-row and appeared to be yielding as well as most of the wheat.

Yields of wheat were not much in excess of 400 kg per jerib or 2 MT per hectare, although one farmer in Sarhad claimed to have obtained yields of twice that amount. Most farmers were, however, expecting less. Although the harvest as seen in the field with the sheaves neatly arranged in stooks, waiting to be taken to the threshing grounds did not look so bad, many farmers complained of dry winds and shriveled grain. Infestations of wild oats and wild rye are severe everywhere.

3.7.4 Use of Fertilizer

There was little evidence of chemical fertilizer being used, and none was observed on sale in the local bazaars, although some was seen in the FOCUS store in Ishkeshem (very different from the Hazarajat, where urea at least can be found in every country bazaar). Farmers admitted that they seldom if ever use chemical fertilizer, unless provided by an NGO, although they do use farmyard manure to some extent if they have any to spare from their fuel needs.

3.7.5 Opium Poppy (*Papaver somniferum*)

Opium poppy is not cultivated in Wakhan, although it is possible to find the odd plant in a household garden plot for family 'medicine.' The main poppy-growing districts in Badakshan are further west in Waduj, Jurm, Kash, Faizabad, Keshm, and Argo.

3.7.6 Use of Wild Plants and Herbs

Some nutritional use is made seasonally of wild plants, particularly common field weeds such as *Chenopodium sp.* and a variety of wild onions. Wild mustard (*Brassica sp.*), which is common in all wheat fields, is harvested for its seed, which is processed into oil. However, the mission found less use being made of wild mountain plants in the Wakhan than Fitzherbert has found being used, for instance, by the Hazara people in the central Afghan mountains.

As far as we could gather, little use is made in Wakhan and the Pamir of wild herbs and plants gathered to sell on a commercial basis. Elsewhere in Badakhshan wild cumin or *zireh* (*Bunium persicum*) is collected from the mountains by villagers and makes a useful contribution to their income. It is of very high quality and aroma. This herb does not appear to occur in the Wakhan or Pamir. Liquorice or *Shirin boya* (F*lycyrrhiza glabra*) grows as a common weed in the cultivated land as well as the surrounding wasteland throughout the Wakhan. In some parts of Afghanistan, liquorice root is gathered and marketed, but this is not so in the Wakhan. The mission was impressed by the thickets of buckthorn (*Hippophae sp.*), which dominate much of the riverine scrub in many places along the Wakhan Valley. The buckthorn bushes at this time of year are full of orange-red berries, and the profusion of wild roses is laden with bright red hips. In other places, including the Central Asian Republics and as close as just across the river in Tajikistan, both sea buckthorn and rose hips are gathered and processed into medicinal cordials. Here in Wakhan and Pamir, they remain unused by the human population. The mission also came across thickets of currant bushes (*Ribes sp.*), but these bore no fruit at this season. In Kyrghyzstan, Fitzherbert has come across Kyrghyz mountain communities that made good use of wild black currants. There seems to be no such tradition here. However, the popular use of such wild fruits and berries in the Central Asian Republics seems to be very much a cultural legacy of the Russians.

On the mountain slopes a spiny *Astragalus* is common, which in other places in Afghanistan, Iran, and eastern Turkey is lanced commercially as a source of gum *tragocanth*, but this activity is apparently unknown to the local Wakhi population.

3.7.7 Fodder Crops

Some lucerne (*Medicago sativa*) is cultivated for fodder but on a very limited scale. The mission found no evidence of Persian clover or shaftal (*Trifolium resupinatum*) being cultivated in this area. In central and lower Badakhshan, in Warduj and Baharak, Persian clover is extensively cultivated as part of the wheat/ opium poppy cycle.

3.7.8 Fruit and Timber Trees

The area is generally not suited for fruit production. Some old apricot and a few apple trees bearing a small fruit can be found in many villages, although not in the highest settlements. Poplars are cultivated for building timbers to some extent where there is sufficient water, but this is not very extensively east of Qazi Deh. Willows are grown along water courses and pollarded, and where poplars are not available, these are the main source of building material as well as for making ox ploughs, saddle trees and wood shovels and pitchforks, and also, very importantly, the wooden frameworks for yurts (*khergah*), which are made by the Kyrghyz. In places on the mountains, there are the remnants of ancient juniper forests that are now very depleted.

3.8 Herders and Herding Practices

Here it is important to differentiate somewhat between the Wakhi and the Kyrghyz.

3.8.1 The Wakhis

The Wakhis are a basically sedentary people of mixed, mainly Iranian origin, speaking an Indo/European tongue (sometimes categorized as being a Dardic tongue), with their homes in settled villages or *gheshlaq* scattered all along the Wakhan Corridor from Ishkeshem to Sarhad-e-Broghil. They are predominantly Ismaili Muslims and are therefore followers of the Aga Khan, whom they consider to be their 'Hazer Imam'-their Present or Living Imam. Some Wakhis are said to be Sunnis. There are Wakhi populations across the river in Tajikistan in Gorno Badakhshan and also in Chitral and the Northern Areas (Gilgit and Hunza) in Pakistan. They own both sedentary herds and flocks and are also involved in transhumance herding, owning cattle, yaks, sheep, and goats as well as Bactrian camels, horses, and donkeys. The transhumance herders who take their flocks into the Pamir Mountains have acquired a number of customs and habits from the Kyrghyz of the eastern Big Pamir and the Little Pamir, as, for instance, tending to live in yurts while up on the high pastures. They do not make these for themselves but commission them from the Kyrghyz with whom they trade.

For most Wakhi villagers who own only a cow or two or a handful of sheep, herding is carried out within a comparatively short distance of the main settlement under the guardianship of a communal village shepherd (*chupan*) or herdsman (*padaban*). However, in many communities there are larger stock owners, who usually band together with three or four other larger stock owners, not only from their own but also from neighbouring villages, to take their stock for the summer to traditional summer grazing camps or *aylaq*. In each of the four herding camps where we stayed in the Big Pamir, the two, three, and four families herding together were from different villages. They go to the high mountains for between four and five months together with their families, returning to their *gheshlaq* in late September/early October or as the weather forces them off the high ground. At least that is the general rule, but as the mission discovered, some families have taken to leaving most of their stock up in the high valleys all the year, provided the winter stays open and they are not forced down. This was the case with the two herding groups, the Zaman and the Bakhshah groups, with whom we stayed in the Ishtemich/Shikargah Valley. In each of these cases, a group of four families from neighbouring villages had agreed to herd together.

In October the families, women, and children return to their *gheshlaq* for the winter together with the mature male yaks, leaving the main flock of sheep and goats up in the aylaq in the care of four shepherds. Unless forced down by the weather, they will stay in the Ishtemich Valley all winter. This may well be a point of competition with the Marco Polo sheep, whose traditional wintering grounds these herders are almost certainly now occupying. This appears to be a comparatively new practice. Dr Ron Petocz, whom the mission met in Kabul, said that in the 1970s, when this was a Royal Hunting Ground and a National Reserve, the Wakhi herders did not bring their flocks and herds into the Big Pamir, let alone keep them there over winter. This needs further investigation.

An interesting symbiotic relationship exists between these Wakhi herders of the western Big Pamir and the Kyghyz of the eastern Big Pamir. When the women, children, and families go back to the *geshlaq*, these Wakhi herders send their female-by now pregnant-yaks and also a number of young male sheep to be looked after and herded for the winter by the Kyrghyz in the eastern Big Pamir. The nearest Kyrghyz herding camps being more than a two days' ride away from the Ishtemich/Shikargah Valley, someone must take them over there.

Payment is made in the free use of the yak milk after the yaks calve down, at least until they are collected again next summer, and in grain and other items that the Wakhis may have which the Kyrghyz do not. It is an arrangement that appears to work to both sides' benefit. The Kyrghyz also make the yurts in which these Wakhi herdsmen live when on the mountain.



Milking yaks in Ishtemich valley

These yurt camps may move two or more times in the summer. Other Wakhi *aylaq* are more permanent in nature, with simple stone cabins and stone stock corrals. The mission stayed in the latter type in the Porsan and Yupgaz Valleys in the western Big Pamir.

The main product (apart from live animals and meat) from the *aylaq* is dried yoghurt known as *qurut*, made from either yak, cow, sheep, or goat milk. This may be sold but is commonly a mainstay of domestic diet in the winter months. Wool is mainly kept for family use and made into felt or spun and knitted or woven for woolen garments.

Itinerant merchants and peddlers travel up to the herding camps with strings of pack horses and donkeys loaded with domestic commodities such as cloth, shoes, boots, scissors, needles, rice, vegetable oil, salt, and tea and procure sheep and goats and other stock as well as surplus dairy products. Cash may be used, but most trade in these remote places appears to be conducted by barter. Almost all herding camps have a guest room or a guest yurt for such travelers, and it was mainly in these places that we stayed.

3.8.2 The Kyrghyz

The Kyrghyz are a Turkic/Mongol people, speaking a branch of the eastern Turkish tongue. They are nominally Sunni Muslims, although they retain certain pre-Islamic, possibly originally shamanistic customs and acknowledge the leadership of hereditary Khans. In Afghanistan they are still true yurt-dwelling herdsmen, and those still living in the Afghan Pamir do not cultivate crops. Their homes are in the round felt yurts so traditional, in their various forms, to the Turkic and Mongol peoples of the Central Asiatic steppe and mountains-Turkmen, Kyrghyz, Kazakhs, Mongols and others. In Afghanistan, they live in the eastern Big Pamir and

in the Little Pamir with their herds of yaks and cattle and flocks of sheep and goats, horses, donkeys, and Bactrian camels.

In the Central Asian republics, the Kyrghyz mainly live in the Kyrghyz Republic [Kyrghyzstan] and there is a population of Kyrghyz yak herders across the river from Afghanistan in the Tajikistan Pamir in the Autonomous Oblast of Gorno Badakhshan. The Soviet experience has wrought profound changes on the Kyrghyz in these republics, where almost all are literate and most are settled although still practicing transhumance herding. Many are now urbanized. There is a population of Kyrghyz also in western China, in Xinjiang, who are reported still to be herders. The Afghan population represents the few that escaped being swept up into either the Soviet or Chinese political net in the chaotic years that followed the end of the First World War and the civil wars and revolutions it spawned. After fleeing from one place and another as the tide of conflict and revolution swept across Central Asia, two *aymak* or tribal groups finally settled in the Afghan Pamir under their Khans. (*Ref.* M. Nafiz Sharani, *The Kirghgiz and Wakhi of Afghanistan*, Sept. 2002.)

Unfortunately, the mission did not have sufficient time to get to either of the Afghan Kyrghyz communities in the Afghan Pamir, as this would have required one or two more weeks, but we were able to learn quite a bit about them. According to various sources there are between 210 and 240 Kyrghyz households currently living in the two Pamirs. Most-possibly as many as 140 families-live in comparative poverty in the Big Pamir. Their official representative with Kabul is Wali Khan, who lives in the Big Pamir. Possibly as many as 100 families live in the Little Pamir. In total there may be as many as 1 400 or 1 600 people altogether between the two groups. The Kyrghyz of the Little Pamir are described as being very well-off in terms of livestock, and their traditional leader, Efendi Bay, is said to own more than 10 000 head of stock (in other words, 'very many').

They live in scattered family herding groups and shift their camps seasonally according to the season, the weather, and the grazing. In respect to horses, they are reported to keep mainly stallions, which they acquire from their Wakhi neighbours. Although they eat horse meat (which their Wakhi neighbours do not) they do not, as in Kyrghyzstan, keep herds of mares to milk to make *kymys* (fermented mare's milk), at least as reported to us.

The Kyrghyz of the Big Pamir are reported to live from the Elghunoq Valley eastwards to Zar Kol and beyond, but not west of Elghunoq. In the Little Pamir we were advised that the Kyrghyz herding camps begin at a place called Ak Julga (or Ak Jylki, meaning 'white mare'), which is the summer quarters together with Bozoi Gumbaz of their tribal leader Efendi Bay. From Al Julga eastward to the Chinese and Tajik frontiers is all Kyrghyz.

As reported to us, there are fifteen Kyrghyz clans (*taifeh* in Persian, *urun/uruk* in Kyrghyz), which may also define their herding groups. They are as follows, as given to the mission by their Wakhi neighbours (some possible approximate meanings given): the Shahin ('falcon'), the Bogha ('the bull'), the Now Ruz ('New Year'), the Kopchak ('Kipchak'), the Ala Pa ('speckled feet'), the Odunchu or Otunchu ('block-heads' ?), the Tekran (singular, unique ?), Kezik 'wanderer, traveler' ?), Kochkor ('the ram'), Kyzylbash ('red head'), Durbu (or Durbul), meaning 'far sighted'), Gadar Shah ('the people of Gadar Shah'), Naima ('gentle'), Kyzyl Ayak, meaning 'red feet'), and the Kotan (plough). [NOTE: translation of names to be re-confirmed with the Kyrghyz themselves on a subsequent mission.]

As we were not able to visit the Kyrghyz in either the Big or Little Pamirs, we can say no more at this point concerning the human interface between these herders, their flocks and herds, and the wildlife of the part of the mountains they both inhabit. Popular belief is that as well as the large Kyrghyz flocks and herds in the Little Pamir, the largest populations of Marco Polo sheep also inhabit that part of the range.

Whereas the Kyrghyz of the Big Pamir trade westward to the main Wakhan and have no access through to Tajikistan, the Kyrghyz of the Little Pamir are said to trade mainly with Gilgit in Pakistan, with a few individuals being permitted to go across the Yuli Pass to trade in Tash Gorgan in China. This needs to be confirmed.

3.8.3 Veterinary Services

There appear to be no veterinary services of any kind in the Wakhan or the Pamir. The mission found no evidence of any NGO or UN programme nor any freelance private service providing even basic veterinary services, let alone vaccinations for any of the main endemic diseases, either in the main Wakhan strip or in the Pamir.

Such a programme does not yet appear to have been included in the FOCUS/AKDN programme, and the FAO-assisted programme has not found its way to this corner of Afghanistan yet. In view of the importance of livestock to the rural economy of the area, and also in view of the reportedly large numbers of domestic livestock in certain sections of both the Big and Little Pamir, this situation needs to be carefully studied together with the potential problems of grazing competition between wild ungulates and the domestic herds and flocks.

Herdsmen spoke of common diseases as being foot-and-mouth (*langi*), sheep pox (*chichek*), enterotoxaemia (in certain places), scabies (*gur*), and ticks, with internal parasites such as liver-fluke mentioned as existing on certain parts of the mountain, but not everywhere.

4 DISCUSSION

4.1 Wildlife of the Wakhan and Pamir in the Afghan and Asian Context

Compared to many other areas in Afghanistan, the present status of wildlife in the Wakhan Corridor and the region's conservation potential are very encouraging. The corridor's recent history and occupation by the Northern Alliance forces meant that wildlife was spared devastation from bombings and landmines. With five species of large carnivores and three species of mountain ungulates, the region provides a fine representation of the high-altitude wildlife of the mountains of south and central Asia. Together with the fact that the region seems to support significant populations of up to four species of large mammals listed in the IUCN's Red List of Threatened Species, this renders the Wakhan Corridor one of global conservation importance. Despite extreme poverty and opium addiction, we found the Wakhi people to be very law-abiding. Most guns have been returned to the government, and people seem very much to respect President Karzai's recent directive banning hunting, except in the one instance of a government official's poaching a brown bear.

Yet there are important concerns for wildlife conservation in the Wakhan Corridor. For instance, localized degradation of pastures in the Big Pamir threatens the Marco Polo sheep. Recent evidence from other parts of the Hindu Kush/Himalayan system indicates that intensive livestock grazing can significantly reduce resource availability for wild herbivores, both through instantaneous effects of forage consumption, as well as through long-term changes such as reduction in plant cover and changes in plant species composition (Mishra 2001). In fact, out-competition by livestock has presumably caused the local extinction of mountain ungulates in many areas (Mishra and others 2002). The degradation of mid-elevation pastures in the western part of the Big Pamir threatens the traditional wintering habitat of Marco Polo sheep, especially of the female and young (Petocz and others 1978). Concerns about the impacts of livestock grazing on Marco Polo sheep populations were expressed earlier by Caughley (1970), who cautioned that if the female population showed signs of reduction in fecundity, the livestock density would have to be reduced. In our survey, we found that the higher-altitude summer pastures of Marco Polo sheep are presently in good shape, and we expect the females to show high fecundity. Further, since the winter habitat is degraded, we predict significant over-wintering mortality, especially among lambs and yearlings as seen in other wild herbivores (Saether 1997, Clutton-Brock and others 1988). Another potential threat to the Marco Polo sheep and other mountain ungulates in the region is the risk of disease outbreaks. We found scabies and foot-and-mouth disease to occur in the livestock population in the Big Pamir. In sub-Saharan Africa, where cattle are usually a benign host to rinderpest virus, outbreaks have caused up to 90 per cent mortality when the disease spread to wild ungulates such as the wildebeest (*Connochaetes taurinus*) and the African buffalo (*Syncerus caffer*) (McCallum and Dobson 1995).

4.2 Human-Wildlife Conflicts

Persecution by people in response to livestock predation has eliminated several carnivores such as the tiger (*Panthera tigris*) and lion (*Panthera leo*) from large parts of their former ranges (Novell and Jackson 1996). In the mountains across south and central Asia, traditional and extensive livestock production systems are an important form of land use and means of livelihood. These areas are also home to large carnivores such as the snow leopard, wolf, wild dog (*Cuon alpinus*), and lynx. The levels of livestock predation by these large carnivores, especially the snow leopard and the wolf, are believed to be substantial, with studies estimating the annual losses at an average of about two to almost five heads of livestock per family (Oli and others 1994, Mishra 1997, Spearing 2000, Jackson and Wangchuk 2001). Retaliatory persecution of the snow leopard is one of the most widespread and direct threats to the species (McCarthy 2000, Spearing 2000, Jackson and Wangchuk 2001). The human-wildlife conflict in the Wakhan Corridor then is not much different from that in other parts of the snow leopard's range.

Can this conflict be eliminated? What can be done to control the levels of livestock losses to wild predators in the Wakhan Corridor? To answer these important questions, one needs to consider some biological issues concerning livestock predation in general, and other issues that are more specific to the Wakhan Corridor. Review of human-wildlife conflicts elsewhere reveals that as long as there is an interface between livestock and large carnivores, some livestock will inevitably get killed, even under the best conditions when plentiful wild prey is available to the carnivores (Madhusudan and Mishra 2003). Ever since livestock were first domesticated some 10 000 years ago, the decreased risk of carnivore predation (due to protection) has lowered the ability of livestock to detect predators or escape from them, and has also caused a breakdown of their camouflage coloration (Zohary and others 1998). On the other hand, since the wild prey have retained these abilities, hunting a wild herbivore is relatively much more difficult; to take an example, only 5 per cent of the hunting attempts by tigers on wild prey are reported to result in successful kills (Schaller 1967). This means that whenever an opportunity is present, livestock are always liable to be killed by large carnivores. Such a conflict therefore can only be minimized with better anti-predatory livestock management, but never eliminated (Madhusudan and Mishra 2003).

Use of guard dogs by the herders of the Wakhan Corridor presumably limits livestock losses to wolves and snow leopard to quite an extent already. Yet, some of the herding practices we observed, such as cows and yaks being left to graze unattended, or livestock often being herded by little children, make for poor anti-predatory management. Similarly, we found that the open corrals and the roofed in stables where the animals are penned in winter are poorly constructed. Often, large holes are left on the ceiling to allow for light, providing the snow leopards a way to enter the corrals. It is also significant that most of the losses to snow leopards in the Wakhan Corridor were reported in winter, when the predators entered the corrals and caused excessive surplus killing of livestock. This seasonal pattern suggests to us that marmots must be an important buffer prey for the snow leopard throughout summer. Once marmots go into hibernation in autumn, there is apparently a significant decline in prey availability for the snow leopard, and that is when it seems to start preying heavily on livestock.

The International Snow Leopard Trust (ISLT) and other organizations have worked with herder communities extensively in south and central Asia. In exchange for a commitment toward the conservation of the snow leopard and other wildlife, ISLT has helped herders make their corrals predator-proof, a low-budget exercise that completely eliminates the instances of surplus killing. Such an initiative needs to be undertaken with urgency in the Wakhan Corridor. ISLT has also helped herders set up self-managed insurance programs for livestock against carnivore predation. However, considering the levels of poverty in the Wakhan Corridor, what is perhaps more relevant is a program along the lines of Snow Leopard Enterprises-an incentive scheme that is helping to curtail poaching and retaliatory killing of snow leopards in Mongolia through income generation from handicrafts (Wall Street Journal 2002, Mishra and others submitted).

4.3 Wildlife Trade

Fur trade is not new to Afghanistan. It expanded in the 1960s to supply the markets in Western Europe and United States as well as the local tourist market (Rodenburg 1977). Following a recommendation by Petocz (1973), the government issued a ban in 1973 on the sale of carnivore furs, although the traders were given six months' time to dispose of their stocks. The government also stamped some 80 000 furs during this period (Rodenburg 1977). Fitzherbert, travelling in Afghanistan in 1971 and 1974, found almost all the bazaars in the provincial centres and others such as the famous wooden bazaar at Tash Gorgan (destroyed in the war), not just Kabul's bazaars, full of furs of all kinds sold both as skins and as items of clothing. This market seems to have died down in the years of conflict, or at least it was not much in evidence in Kabul during the Mujahideen years (1992 to 1996) or the Taliban years (1996 to 2001). Nevertheless, the market for furs has continued until today, and the recent influx of foreigners (from security forces and aid agencies) has provided a new boost to this trade.

In his survey of fur trade in Afghanistan, Rodenburg (1977) established that most of the furs in Kabul were procured from Mazar-i-Sharif, Maimana, Kunduz, Ankhoi, Khanabad, Ghazni, and Herat, and not from

Badakshan or the Wakhan Corridor. Our survey has established that even today there is no direct linkage between local hunting in the Wakhan Corridor and the fur trade in Kabul. However, our inquiries in Chicken Street pointed to Badakhshan as being a main source of snow leopard and lynx skins. Nevertheless, it is clear that the Kabul fur market is a very serious threat to wildlife conservation in Afghanistan. The trade seems very lucrative for the shopkeepers in Chicken Street-the average selling price of a snow leopard fur is 2 to 20 times greater than what the local hunter is paid for it (see Table 1 Annex 3). Even in the Wakhan Corridor, from the viewpoint of the hunter, a single fur of a snow leopard could fetch him more money than his income for several years. With ongoing improvements in communications and accessibility of the Wakhan Corridor, there is an immediate threat of commercial hunting for furs starting there.

It is also important to note that 25 years ago, among the larger carnivores, wolves and foxes were the dominant species in trade in Kabul, with only a limited number of common leopard, lynx, and snow leopard skins being traded (Rodenburg 1977). The present market, on the other hand, seems to have expanded to include the lynx and the common leopard as dominant species in trade-lynx is a globally threatened species listed in the IUCN's Red List. It is also notable that there is a market only for wildlife furs in Kabul, and so far there does not seem to be a link with the Chinese market for wildlife products such as tissues and bones of large carnivores or bear gall bladders. Arresting the fur trade in Kabul has to be a priority if these several species of global conservation importance are to be conserved

4.4 The Human Element

4.4.1 Armaments

Compared with many other parts of Afghanistan, the Wakhan and Pamir region has escaped many of the worst aspects of conflict. Nevertheless, as is true everywhere in the country, there has been comparatively free access to guns.

The general population of the Wakhan is too poor and too consumed with the struggle of survival to acquire extensive weapons. Nonetheless, it was clear from our conversations in villages that a number of men in each village possessed AK-47s, at least until the recent call up of arms. It seems that within the last six months, in response to the demands of Karzai's government, the local authorities have successfully collected arms from the local Wakhi population and that these appear to have been given up quite willingly. How effective this may have been among the remoter Kyrghyz population is not known.

The common armament for villagers (if at all) as well as of the travelling traders and peddlers is what they call the '*mush kush*' (literally 'mouse killer') or 0.22 rifle, which is generally used for shooting small animals and birds like hares and partridges. We met such an itinerant trader in Sarhad with his dog, his donkeys and horses, an assistant, and his '*mush kush*' to shoot chukar partridge and hares for eating on his travels.

The greatest danger appears to be from the local militia and soldiers returning on home leave with their issued rifles or AK-47s and using these for hunting. This remains a great temptation. Also problematic is the eternal temptation for those in authority and with access to guns, such as the provincial and district authorities, to flout the laws they are meant to protect and use their privileged position to go hunting. An instance of this was the *woluswal* of Wakhan, who recently shot a bear. In the Wakhan context this should be easier to bring into order than in many parts of the country. We advised the Aga Khan/FOCUS office in Faizabad of this incident, and they felt they could bring influences to stop it. We also advised Dr Azizi, Deputy Minister of Irrigation, Water Resources and Environment, who also took due note.

4.4.2 The Hunting Ban

To our surprise, because we had not previously heard of such a thing, we were informed by everyone we met in Wakhan from the local authorities to the simplest herdsmen in the valleys of the Big Pamir, that

President Karzai has issued a ban on hunting and that this will be respected. It was not clear, however, if this applied only to Wakhan and Pamir or is supposed to be countrywide, or if it is specific only to 'big game' animals (as we suspect) and does not apply to small animals such as hares and birds such as chukar. The hunting ban appears to go hand in hand with the collection of guns.

As it was only possible for us to meet the Wakhi people, we cannot say what the reaction of the Kyrghyz is, either to the collection of guns or to the hunting ban. When we asked the people in Sarhad what they thought, they replied that "The Kyrghyz are a long way away from the eye of authority."

There is little doubt that at least with the Ismaili section of the population who dominate in the main Wakhan strip and upper Wakhan Valley as far as Sarhad-e-Broghil, the moral authority of the Aga Khan can be as strong if not even stronger than the official authorities in getting the civilian population to give up their arms, honour a hunting ban, and help in the protection of wildlife. At the same time organizations such as FOCUS could without much difficulty include in their agricultural training and extension programmes simple methods of improving sheep and cattle pens, corrals, and stables so that they are predator-proof. Almost uniquely in an Afghan context, we felt that the aid agency in place in the area could play a vital and influential role in this instance in the context of wildlife and environmental protection.

4.5 Social Issues and Rural Development

This report has already dealt with the many social and poverty issues relating to the Wakhan and the Pamir. The area will inevitably remain one of the remotest and naturally poorest in the country. Fortunately, there is one substantial agency group with a long-term stake in the development of the area and its people. This agency, the Aga Khan Development Network, has mature programmes being managed immediately across the frontiers in Pakistan and Tajikistan, which can also add some regional strength.

However, apart from UNICEF, the United Nations agencies are notable in their absence from this region. This certainly needs to be put to rights, especially by FAO, which has a vital role to play in such things as crop improvement, animal health, and livestock production as well as with providing technical rigor to small-scale irrigation projects. In the 1970s FAO played the leading role in environmental issues, studies, and the development of management plans. FAO needs to decide what it would like its role to be in today's context.

4.6 Limitations of the Present Assessment

4.6.1 Timing and Duration of Survey

A serious gap in this mission was the fact that due to a lack of time we were not able to visit the Kyrghyz population in either the eastern Big Pamir or in the Little Pamir. This would have required an additional week in each block of mountains, as the nearest we were able to get, in the Ishtemich/Shikargah Valley in the Big Pamir and the Dalriz Pass at the eastern end of the Little Pamir, was still two days' ride from the nearest Kyrghyz herding camps.

4.6.2 The Importance of the Kyrghyz Who Were Left Out

In terms of the environment and conservation, the Kyrghyz are of immense importance in this area. They are completely dependent on their herds and flocks, and by all accounts those of the Little Pamir have very sizeable numbers of animals-sheep, goats, cattle, yaks, horses, and Bactrian camels. It is vitally important to understand the interface and competition that these herds have with the wild ungulates, particularly with the Marco Polo and urial sheep. The social dynamics and social order of the Kyrghyz are very different from those of the more settled Wakhi farmers and transhumance herders, although the relationship between the two communities appears to be both cordial and symbiotic, as each has things that the other community

In the time available, the mission was able to find out a great deal about both the environmental and human situation. The mission was able to make a number of firsthand observations of wildlife including sightings of Marco Polo sheep and ibex as well as finding signs of snow leopard, brown bear, wolf, fox, and other animals. The mission also recorded sightings of the local bird life and exploring the state of the agricultural areas and rangeland. In addition the mission was able to gather an interesting and revealing collection of anecdotes and information relating to wildlife, herding and farming systems, social and human relationships, and human/wildlife conflict as well as distances and times required for travel in this remote area.

All along the routes traveled the mission recorded place names, grid reference data, and altitudes. This information is recorded in detail in this report and its annexes. Most of the time in the Pamirs was spent at between 3 000 and 4 750 metres altitude. This information was submitted to the UN Mapping and Information Unit (AIMS) in Kabul.

In addition, the mission visited local markets and bazaars in Badakhshan and significantly in Kabul, where a growing trade in the skins and furs of a number of endangered species of wild animal is once again developing.

Among the most significant of the mission's findings are:

- The mission identified and recognized a number of problems, pressures, and areas of conflict between the human population and the natural environment including the wildlife.

  These include:

  1. the threat posed by a reviving trade in the furs and skins of endangered species such as the snow leopard, wolf and the lynx;

  2. the conflict between herding communities and the large predators, primarily the snow leopard and wolves that prey on the domestic herds and flocks; and

  3. competition for grazing between the transhumance and nomadic herders and the wild ungulates, in particular the Marco Polo sheep on certain sections of the range.

- Nonetheless, despite these threats and dangers, the mission concluded that the wildlife situation in Wakhan and the Pamir is far from hopeless. Indeed, the situation, although highly vulnerable, appears to be better than the mission had expected. The area's remoteness from politics and conflict, and even the Soviet occupation itself between 1980 and 1989, have provided some protection to the unique wildlife of the area. We concluded that among the Wakhi population, at least, hunting pressure has been limited, and professional commercial hunting (as opposed to retaliation/conflict killing of fur-bearing predators such as the snow leopard and the wolf) is not taking place in any systematic form. A recent ban on hunting, issued by the government of Hamid Karzai, appears to have been taken seriously, and there has been a reasonably successful collection of lethal armaments, at least among the Wakhi population.

- Despite the progress made, a more exact knowledge of numbers of various species, their location, and spread requires a longer and more extensive assessment mission than was possible on this occasion. This will require at least two months or more in the field. This should be planned and funded for next summer and should include the full participation of the Afghan government with a strong element of training.

- The mission concluded that the whole of the Wakhan, including the western 'corridor' and both Big and Little Pamirs, should in future be included in any conservation programme-and not just the Big Pamir. The

needs. Hunting was always permitted, at least to the Kyrghyz of the Little Pamir, and reports from the 1970s (Petocz and others 1978) indicate that at that time it was being carried out in a sustainable fashion. But at that time the Kyrghyz were mainly armed with 0.22 rifles and not with AK-47s or heavier and more lethal armaments. We do not know to what extent the collection of arms from the Kyrghyz has been successful or to what extent they will respect the present ban on hunting, which appears to be well-accepted by the Wakhis. On the optimistic side all our Wakhi informants, as well as the Uzbeq traders we spoke to and who know the Kyrghyz areas well, spoke of there being more Marco Polo sheep in the Little Pamir than in the Big Pamir. However, we also heard of camel-loads of 'game carcasses' being brought down to Sarhad-e-Broghil in the early 1990s when the Rabbani government had a garrison there. At the present moment, fortunately, the Karzai government border guards hardly constitute a garrison. We also need to know if the Kyrghyz traditional love of furs leads to more hunting of fur animals by the Kyrghyz than by the Wakhis, or whether their close proximity to China and the apparent permission given each year for a few Kyrghyz from the Little Pamir to go to trade in Tash Gorgan in Xing Xiang has led or may lead to a trade in big cat body parts. There are rumours of a growing trade in opiates over the Yuli Pass to China. In short, there is much that we need to know about the Kyrghyz and the Kyrghyz areas in the eastern Big Pamir and the Little Pamir, and any future mission must allow sufficient time for this. Approximate times required for travel to these areas are given in Annex 7.

5 RECOMMENDATIONS

5.1 Understanding and Addressing the Needs of the Resident People

It should go without saying that any conservation programme in the Wakhan and the Pamir must at the same time address the needs of the resident population. As has been described here, these needs are many and multifaceted. It is necessary to understand the local peoples' needs, whether they be Wakhi farmers and herdsmen or Kyrghyz herdsmen. The people of the Wakhan and the Pamir are among the most isolated and poorest in the country, comparable with the poorest, most isolated communities in the Central Hazarajat and Ghor, with some additional and unique problems such as opium addiction. Fortunately, the area has a number of things going for it. The population is by and large a peaceful one and inclined to be law-abiding, as we found in their attitudes towards the hunting ban and the comparative ease with which the local Wakhi population have been disarmed. The main player in the area is FOCUS/Aga Khan Development Network, which has a long-term vision towards the community-based rural development of the area and the funding or the potential sources of funding to go with it.

The Aga Khan group have a long and successful history of participatory community development from their experience in the AKRSP Programme in the Northern Areas of Pakistan, and in the last ten years or so also across the river from Wakhan in Tajikistan in the Autonomous Oblast of Gorno Badakhshan. They claim that the philosophy on which they are basing their programme in Wakhan and Pamir is the same, with an emphasis on empowering communities and community responsibility and decision-making. The Wakhis are followers of the Aga Khan, whom they hold in great respect as their Hazer Imam. The Aga Khan Development Network is also the only non-UN aid agency providing assistance to the Kyrghyz.

In the years before the Soviet War, it appears that quite a lot of success was being achieved in the Big Pamir National Reserve through involving the local population in the management of the reserve, and local people were gaining direct benefit from this, through various forms of involvement and employment. Any future programme must be managed in such a way that provides the local people with a sense of ownership. It must provide them with the notion that they are the net beneficiaries of being the guardians of the environment and the wildlife with whom they share their mountains.

We sensed a great love of their mountains and of the wildlife among the people with whom we traveled and stayed, although certain animals such as the wolf in particular is perceived, as elsewhere, as the traditional and ancient enemy of man. However, communities are poor, and people must find grazing for their herds and flocks or be provided with alternatives. Locals come into conflict with the wild predators when the predators attack their animals. Sometimes, small improvements to the construction of stables and corrals can do much to guard against such conflicts.

There are limitations to what can be done to improve agricultural production in such a harsh environment, but there is no doubt that much more can be done than has been to date. FAO at present has no presence in the area, but by providing the right kinds of input through agencies such as FOCUS, much can be done as has been in parts of the Hazarajat-in the districts of Yakowlang and Panjab, for instance, where the introduction of high-yielding, disease-resistant, winter-hardy wheat has brought about a revolution in terms of village food security.

There is no veterinary service at present in Wakhan or Pamir, despite the population's dependence on herding and livestock husbandry. FAO should study what can be done to set this right in as sustainable a fashion as possible. The models successfully adopted elsewhere in Afghanistan should be looked at here.

5.2 Understanding the Human Use of Resources in Space and Time

It is essential to understand that rural people use the resources available to them according to their needs at the time. The needs to be fed, to cook, to keep warm, to cultivate the land and grow crops and to find

grazing for herds and flocks are all paramount. These human needs do not necessarily degrade the environment, although they often do. If there is serious competition between human needs and the health of the natural environment, then the pressure can only be relieved by finding alternative livelihoods or sources of what is required for daily living. This will be a major challenge in the Wakhan and the Pamir, where the local population needs so much and already lives on the margins of existence.

Already things are improved somewhat from what they were a few years ago, as food aid has started to come in and food-for-work programmes have been initiated to help improve basic infrastructure such as roads. UNICEF and AKDN are paying attention to education, and although programmes are still woefully inadequate, more attention is being paid to health. A start is being made on agricultural development, although much more can be done to improve production in small ways.

From a wildlife conservation viewpoint, before any conservation management plans can be created, a proper mapping needs to be undertaken covering natural resources that people use and 'hotspots' for wildlife. This has to include mapping of rangelands, and data on how they are used-how many livestock graze there, and for how long. Within this larger landscape, such an exercise will help stratify areas according to their relative importance for wildlife conservation as well as for local peoples' subsistence. We are proposing that the entire Wakhan Corridor be managed as a conservation unit. However, within this larger landscape, specific 'wildlife hotspots' will need to be identified and preserved. Such a resource mapping exercise will help identify areas that can be set aside for wildlife conservation without compromising the welfare of the local people.

5.3 The Need to Focus on the Entire Wakhan Corridor as a Conservation Unit

Marco Polo sheep and the trophy hunting programme for mature rams in the Big Pamir were the main focus of the Afghan Government insofar as wildlife conservation and use in the Wakhan Corridor is concerned. Together with the Little Pamir, the Big Pamir is a stronghold of the Marco Polo sheep, a species of global conservation importance and listed as Vulnerable in the IUCN's Red List (2002), which deserves continued, or rather, renewed attention. This species also holds great promise for generating revenue for conservation and development in this region afflicted by extreme poverty, provided detailed studies in the future establish that the population can support a trophy hunting programme. For the time being, until there is much more detailed knowledge of numbers and locations, and until it can be guaranteed that such a source of revenue will not be corrupted, but rather used for the benefit of the area and its people, the current ban on hunting should remain and as far as possible be enforced. In other parts of the world licensed hunting, and even wild-life tourism, when well managed, has tended to provide the major benefits to the foreign hunting outfitters and tour companies and to a few privileged government officials or private entrepreneurs rather than to the local population. This must be guarded against in the future case of the Wakhan / Pamir.

Yet during our survey, we found the mountains of the Hindu Kush in the Wakhan Corridor to be of no less importance than the Pamir from a wildlife conservation viewpoint. Abundant local information suggested that these areas support substantial populations of ibex and urial. Incidentally, urial has the same conservation status as the Marco Polo sheep in the Red List and therefore merits attention. In fact, except for the Marco Polo sheep, this region seems to harbour the entire complement of large wildlife that is found in the Pamirs. Furthermore, our survey indicates that the Hindu Kush, rather than the Pamirs, might be the stronghold of the snow leopard, one of the most threatened species not only in Afghanistan but also across the mountains of south and central Asia. The species is, in fact, categorized as Endangered in the IUCN's Red List of threatened species.

We are therefore recommending that the entire Wakhan Corridor be viewed and managed as an important conservation unit. As mentioned earlier, within this unit, both 'wildlife hotspots' as well as peoples' resources need to be mapped, and specific areas identified and protected for wildlife. In addition to its wildlife value,

this expanded focus is urgently needed, considering that the Hindu Kush region of Wakhan is also a 'conflict hotspot', an area where the snow leopard is involved in an acute human-wildlife conflict by causing significant livestock losses. This results in serious economic losses to a population that is already on the brink of starvation and provokes the retaliatory persecution of this endangered species. The area therefore is in urgent need of conflict management and conservation attention.

5.4 The Need to Understand the Abundance and Distribution of Wildlife and Competition with Domestic Livestock

One of the questions that conservationists and wildlife managers in large parts of the world are faced with is whether or not livestock grazing is compatible with the objectives of wildlife conservation. This question assumes a special relevance in the mountains of south and central Asia, which are characterized by pervasive livestock grazing and a relatively poor human population that is largely pastoral or agro-pastoral. In many of these areas, the presence of livestock, wild herbivores, and carnivores together has resulted in complex problems. As we have already discussed, the mere presence of livestock in the vicinity of large carnivores is enough to ensure some level of conflict. In most of these areas, people retaliate by persecuting the carnivores. Such retaliation has eliminated several carnivores from large parts of their former ranges. The problem can become even more acute if overstocking results in the out-competition of wild herbivores, the natural prey of the carnivores. Overstocking often results in pasture degradation, and can cause the out-competition of wild herbivores by reducing forage availability. Disproportionately high presence of livestock compared to wild herbivores further escalates instances of livestock predation. If the wild herbivore in question is a threatened species, this poses yet another challenge to the wildlife manager.

Such a situation presently exists in the Wakhan Corridor. In the Big Pamir, wintering areas for Marco Polo sheep have undergone degradation due to the presence of a large livestock population throughout the year. This makes physical disturbance and even out-competition of this highly threatened and important species a very real possibility. Furthermore, we found an acute conflict between people and large carnivores, especially the snow leopard and the wolf, throughout the Wakhan Corridor, with the wolf being responsible for livestock predation in the Pamirs, and the snow leopard being mainly responsible in the Hindu Kush area. We found the snow leopard to be a common victim of the people's retaliation.

Considering these factors, we are recommending a study aimed at better understanding livestock grazing patterns in space and time and their relationships with wildlife. The approach for this study needs to be two-pronged. A detailed study needs to be conducted in the Big Pamir to evaluate the extent of pasture degradation, to understand the forage relations between livestock and the Marco Polo sheep, and to evaluate the extent of potential disease transfers between domestic and wild herbivores. This will help determine the impacts of livestock grazing on populations of this threatened wild ungulate and allow the designing of appropriate conservation measures. Simultaneously, as mentioned earlier, an extensive mapping exercise needs to be undertaken to better understand the distribution of wildlife (large carnivores and ungulates) and livestock across the Wakhan Corridor. During this exercise, attention also has to be paid to obtaining more information on the spatio-temporal patterns of livestock predation by snow leopard and wolves. We also recommend that these studies should involve Afghan university students, who can be given a short classroom course and then trained in the field while on the job.

This two-pronged study is a prerequisite for designing an effective conservation management plan for the Wakhan Corridor, as well as for an astute management of the human-wildlife conflict there.

In the meantime it should be possible, through the existing AKDN/FOCUS agricultural and social programme, to introduce simple advice and design plans to help local stock owners construct or improve their existing livestock corrals and stables so as to render them 'leopard proof.' Models from neighbouring countries exist, and this is an initiative that might be started immediately.

5.5 How These Goals Could Be Achieved: Inter-Agency Cooperation

It goes without saying that in the new Afghanistan the full involvement, cooperation, and participation of the Afghan Government at all levels must be sought. With this in mind, the mission team had a meeting with the Deputy Minister of Irrigation, Water Resources and the Environment, Dr Azizi, before the mission, and the team made a priority of debriefing with Dr Azizi on our return to Kabul. The Minister, Dr Nuristani, was not in town during this time.

The importance of involving the local authorities in the process of conservation was highlighted by the story we heard in Sarhad about the Wakhan district governor's killing a bear on a recent hunting trip into the Little Pamir, despite the hunting ban. We told this story to Dr Azizi and urged him to influence the local authorities in Wakhan to realize that as government officials they are not above the law but should be the first to uphold it. Any future programme must ensure that the local government officials are 'on board' and supportive in every sense of what requires to be done.

Among the UN agencies working in the area, UNICEF is already very much present and involved in education and child vaccination. Many villages now have UNICEF school tents, which we observed.

FAO has no presence in the Wakhan or the Pamir at this time, but as mentioned above, could do much in the way of assisting agricultural development and crop production as well as in the field of animal health and production. In the years before the Soviet War, FAO took the lead in the area on questions of conservation and wildlife management, and the studies on which this mission has relied as base information were produced under the auspices of the FAO.

The present and long-term intentions to assist rural and community development in the Wakhan and the Pamir by the Aga Khan Development Network have already been well noted. It is important that they are involved from the outset in any conservation/environmental programme. Fitzherbert and Dr Mishra had meetings with the staff of the FOCUS Badakhshan programme in Faizabad both before setting off for the Wakhan and the Pamir and on our return, and had a very positive response from their local programme manager, Mr Ghulam Panjwani. Fitzherbert also met Mr David Nygaard, Programme Director for the Aga Khan Foundation (AKF) international programme, while passing through Geneva en route to Afghanistan, and there raised the same point, which was equally well-received.

It should also be noted that Prince Sadruddin Aga Khan, who is based in Geneva and has a deep interest in the environment and conservation, also had a previous and serious involvement with Afghanistan when he headed up the post-Geneva Accords United Nations Programme for Afghanistan 1988 to 1991, then known as Operation Salam. His interest and attention should be brought to the work now being initiated.

NGOs such as the International Snow Leopard Trust, who have considerable experience in working together with herder communities and garnering their support for wildlife conservation, could also play a significant role in the Wakhan. ISLT has done this through incentive programs that offer a source of income to local people (through handicrafts development) in exchange for their commitment to conservation, by helping people design low-budget predator-proof corrals, by helping them insure their livestock, and by mobilizing international support and funding for conservation and development. ISLT has also been involved in conducting scientific research and monitoring of wildlife, and, more importantly in the Afghan context, in training local people and wildlife managers in monitoring wildlife. Given this experience, ISLT can play a small but important role in helping to integrate environmental concerns into the development programmes in the Wakhan Corridor and other snow leopard areas in Afghanistan.

5.6 The Concept of a Transboundary International Peace Park

Behind the overall thinking about the future is the concept that the Afghan Wakhan and Pamir might one day be incorporated in a transboundary International Peace Park involving Tajikistan and the main block of

the Tajik Pamir on one side and the eastern Hindu Kush and Karakoram ranges on the Pakistan side as well as the Pamir ranges in western China. This remains an ideal and has been much discussed during the recent 'Year of the Mountains'.

In reality and politically this may still be some time away. Tajikistan, with its Russian-officered border guard all along the Afghan frontier, has strengthened and tightened controls over the frontier rather than the reverse in recent years, as the result of fears of the spread of international terrorism and insurgent movements from across the frontier as well as a growing international trade in drugs across these frontiers. Recent events in Afghanistan and Pakistan mean that the people of the Wakhan are no longer so free or welcome to trade in Chitral as they were before the events of 11 September 2001 and its aftermath. China has and continues to be highly sensitive about its frontiers and nervous of such types of international cooperation across them. Although it is reported that there is currently some discussion in progress between the Afghan and Chinese governments relating to the construction of a transnational highway through the Wakhan valley to western China. If this is a serious consideration it would be bound to have a profound and complex impact on the region.

Nonetheless, in environmental terms the Wakhan Corridor and the Afghan Pamir Knot remain an archetypal example and legacy of 19th century imperial map-drawing that had other priorities in mind. In more recent times these purely political frontiers have been further reinforced by more artificial boundaries.

A long and impenetrable electrified chain-link double fence, separated by a no-man's land of several kilometres, marches across much of the Pamir mountain frontier between Tajikistan and the Chinese Republic, erected during the long standoff between the USSR and China. Fitzherbert has seen herds of Marco Polo sheep (ewes and lambs, so there must be rams as well) caught between these lines of fences, when travelling the Osh to Korokh highway across the Tajik Pamir. During the Soviet War, mainly in the eastern Big Pamir, a number of previously open passes that had been traditional seasonal crossing places for Marco Polo sheep were also fenced.

The frontier between Afghanistan and China is one of the most physically daunting anywhere and is also carefully guarded, despite which it is rumoured to be a conduit for a growing illegal trade in opiates.

None of this looks very good from the point of view of establishing a transboundary Peace Park. Yet this should remain the ultimate ideal. There has to be hope for a future where such boundaries might be relaxed in the interest of conservation.

National and international politics apart, it is interesting to note that left to themselves, the local people of the Wakhan and the Pamir would be only too happy to consort, socialize, and trade with each other. After all, it is only 19th century politics that has (as elsewhere) artificially divided peoples who belong to the same blood, tribe, and religion. The Kyrghyz of the Little Pamir apparently still trade freely with Gilgit in Pakistan. Until very recently the Wakhis of Wakhan traded freely with Chitral. If it were not for the Russian border guards, the Wakhis and Kyrghyz of the Corridor and the Pamir would undoubtedly trade and socialize with those across the border in Tajikistan, to whom they are ethnically and tribally related.

We were given two nice illustrations of this natural good will. On our first night camping in the Jangal-e-Gurvash by the Pamir River, we discovered that we had left our potatoes behind. One of our horsemen hailed a family living across the river on the Tajikistan side and told them of our trouble. Immediately, a girl came out from the farmstead across the river and threw potatoes across the water to us, from one country to another. They were the Dutch variety 'Cardinal', with which the Aga Khan programme in Gorno Badakhshan has had much success. Fazil's 'potato' girlfriend became the subject of many a joke during the next days!

In the winter of 2001/2002, there was heavy snow in the Big Pamir, and many Wakhi herders and Kyrghyz were losing their animals in the snow. They sent a message of their plight across the river, and quite spontaneously, without government or aid agency support, the people on the Tajik side organized a bulldozer/

snowplough and cut out a path down the road on the Tajikistan side, then invited the Wakhi and Kyrghyz herders to bring their animals across the river and walk them down the road to safety and back across into Afghanistan at a lower altitude. It seems that the Russian border guards on this occasion turned a blind eye.

The Aga Khan programme would also certainly like to encourage communication and trade across the river with Tajikistan for the benefit of both sets of communities. They are planning with the cooperation of the Tajik authorities to build several new bridges across the river, but mainly downstream of Wakhan. Mention has been made earlier of the new bridge recently constructed by the Aga Khan Programme across the river between Korokh in Tajikistan and Sheghnan in Afghanistan with others under discussion in Darwaz/Shikay districts. These areas in Afghanistan, despite being geographically very close to the local settlements and markets across the river in Tajikistan, have no access to them, and the locals therefore have no option but to walk for fifteen days and more before they can reach the nearest bazaar in Afghanistan, which is in Faizabad.

Sadly, at present, in the wake of recent political events, free trade and commerce with Pakistan's Chitral as well as with Tajikistan is not being encouraged.

5.7 The Need to Access Russian and Other Information Sources

Previous studies done on the Pamir in the 1970s by Petocz and Habibi admit that their botanical inventories for the Afghan Pamir are very incomplete. During this mission there was neither time nor scope to contribute much to such work, although we have been able to make some general observations as they relate to the comparative health or degradation of the different parts of the range that we were able to observe. It was also late in the season for good botanical observations. Therefore, a botanist with good experience in this part of the world should be included in future missions.

However, it is suggested that much work in this field may already have been done by the Soviets. Certainly they will have carried out very comprehensive and detailed botanical surveys of the Tajikistan Pamir as they had done, for instance, in the Tien Shan in the Kyrghyz Republic, which Fitzherbert, as well as others, have used extensively in their work in the Kyrghyz Republic in recent years. The earlier Western and Afghan experts and researchers may not have had access to the Soviet botanical inventories for their part of the Pamir range, but these should now be much more easily accessible either from the Pasture Institute in Dushanbe, or even possibly from the botanical gardens in Korogh in the Autonomous Oblast of Gorno Badakhshan, or failing that, from Moscow. This should be checked and followed up. If the inventories and maps freely available in Bishkek for the Tien Shan from the Kyrghyz Pasture Institute are anything to go by, those for the Pamir from its equivalent in Tajikistan are likely to be very similar in their detail. These should be sought out as soon as possible. The same applies to many forms of useful data for the northern side of the Panj/Pamir River.

The Wakhan Corridor, including the Pamir Knot, is such a comparatively narrow strip that much information and data applicable and useful to the area must also be available from the Pakistan side of the frontier. This includes historical information dating back to the records and information gathered and maintained during the years of British rule, all of which should be available either from Islamabad, Peshawar, or the archives of the India Office in London.

6 SUMMARY

In summary, the mission was able to do much in the time available in respect to seeing for ourselves, at first hand, on the ground, the situation in the Wakhan and Afghan Pamir. Time did, however, limit what we could do in the vastness of the mountain landscape we were visiting. We strongly recommend that this mission be followed up by a much longer study to be undertaken in the near future, over two or three months and including the whole of the Wakhan, the main corridor as well as the two Pamirs. This should include a strong involvement and participation by the Afghan Government and include a practical training and awareness component for Afghan students working alongside international environmental experts. This must include the areas inhabited by the Kyrghyz, which this mission had insufficient time to visit.

Despite the very considerable human and social problems faced by this particularly poor and remote part of Afghanistan, the mission also found much to be optimistic about. The main aid agency working in the area has a long-term vision for the development of the area based on well-tested community-based principles and has access to the resources to support this work. Environmental issues can easily form an integrated part of this effort.

This is a region of naturally peaceable and law-abiding people, fortunately not wracked by tribal, internecine, or political strife and rivalries.

The mission was pleasantly surprised by the status of the wildlife and the environment in this very unique part of the country. We were expecting much worse. Clearly not everything is right by any means, and conflicts both of a violent and of a more insidious (competition for pastures) nature between the human and wildlife populations do exist. Serious dangers also exist for the development of illegal trade in furs and animal parts, but these do not at present appear to be a serious issue. There are also positive signs, such as the effective disarming of the local Wakhi population and their respect for the recent hunting ban. This ban must be strictly maintained for the time being.

There still is much political work needed to achieve the ultimate goal of an International Peace Park, but if one is to be constituted, the Wakhan and the Afghan Pamir is the natural place to try and achieve it together with Afghanistan's neighbours, particularly Tajikistan and Pakistan, with whom it shares the same mountain ranges. China may be involved too, but this might need to come later. The Wakhan and the Afghan Pamir is a supreme example of a geographical area where 19th century politics has drawn unnatural environmental boundaries. Clearly this is a most delicate matter of national and international politics, and an International Peace Park can only be achieved if it is not perceived to infringe national integrity. It is not likely to be achieved easily, but a start should be made without delay.

This was an enormously interesting and stimulating mission for its participants. We see it as a first step but an important one that we hope will lead on to a long-term programme that will benefit both the local human population, the environment in which they live, and the wildlife with whom they share the mountains of the Wakhan and the Pamir.

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whole area has a unique and vulnerable biodiversity, which is broader than merely the population of Marco Polo sheep. The mission was able to confirm the presence of Marco Polo and ibex in the Big Pamir, but reports indicate that the Little Pamir may in fact hold the larger population of Marco Polo, and this is a place where herding pressure may also be increasing and become more intense in the future. From anecdotal evidence it became clear that the western Wakhan Corridor rather than the Pamir area probably has the greatest concentration of snow leopard. It is here that the conflict between herdsmen and the snow leopard is most intense. In the Big Pamir, wolves are the main predators of the domestic stock. The western Wakhan area appears to have a sizeable population of Siberian ibex and urial wild sheep (*Ovis orientalis*), both of which species are under threat elsewhere in Afghanistan and warrant protection. The present hunting ban should be maintained and as far as possible enforced for the time being.

- The human population of the whole Wakhan/Pamir area-both settled Wakhi and nomad Kyrghyz-suffer from a compound of problems including chronic poverty, ill health, lack of education, food insecurity, and opium addiction, arising from the remoteness and harshness of their environment and the lack of resources and facilities. Any environmental conservation programme must incorporate the local population as full participants and beneficiaries. It must fit in as an integral component of a comprehensive community-based programme including health, education, and infrastructure and the development and improvement of agriculture and livestock husbandry.

- Fortunately, plans for long-term community development programmes are already in the process of being put in place in the Wakhan by the Aga Khan Development Network. Any plans for environmental conservation should take advantage of and build on this as well as on the moral and beneficial influence that can be exerted on the local Ismaili population by the Aga Khan himself. At present the United Nations is represented solely by UNICEF, which is involved in primary education and health. Other agencies such as the FAO, UNDP, UNOPS, and others have a very important role to play, bringing with them lessons learned in other parts of Afghanistan.

ANNEX 1: DIARY OF MISSION

Note: Anthony Fitzherbert (FAO) = ARF: Charudutt Mishra (ISLT) = CM: Assadullah Khairzad (SEA) = AK.

Day 1. Thursday 19 September.

ARF departed Old Hutton, Cumbria, flew Manchester to Geneva. Briefing in UNEP with Dr Pekka Haavisto, Pasi Rinne, Henrick Slotte, Frederic Delpech, Alain Retiere and others. Dinner with David Nygaard Programme Coordinator Aga Khan Development Network.

Overnight in Geneva.

Day 2. Friday 20 September.

ARF flew Geneva to Dubai via Zurich. CM flew New Delhi to Dubai.

Overnight in Dubai.

Day 3. Saturday 21 September.

ARF and CH flew (UN aeroplane), Dubai to Kabul.

Met Peter Zahler, Koen Toonen, David Jensen, Dennis Bruhn, and other members of UNEP team.

ARF meeting with Tesfai Germazien FAO acting programme coordinator Afghanistan.

Night Kabul (UNICA staff house)

Day 4. Sunday 22 September.

ARF and CM briefed by Koen Toonen in UNOPS/UNEP office. Took delivery of equipment and cash. ARF meeting with FAO acting representative Mr. Ismet Hakim and briefed him on purpose of mission. Koen Toonen with ARF meeting with Dr. Azizi, Deputy Minister of Irrigation, Water Resources and the Environment. Briefed him on purpose and nature of mission to the Wakhan and Pamir. Met with Peter Zahler and other members of UNEP team to discuss missions. Made other administrative and logistical arrangements. Met Afghan local expert Mr Assadullah Khairzad (AK) from 'Save the Afghan Environment.' UN Security briefing.

Night Kabul (UNICA staff house)

Day 5. Monday 23 September. Kabul to Faizabad

ARF, CM and AK flew with UN plane to Faizabad, provincial capital of Badakhshan.

Met Mr Joe Kundi and Mr Abdullah of UNAMA - Badakhshan; Mr Ghulam Panjwani and Mr Ahmed Ramin of FOCUS (Aga Khan Development Network) Badakhshan Rural Development Programme; Mr Kamgar of Afghanaid Badakhshan Programme; Dr Kuswant, FAO Fodder Crop Development Programme, Badakhshan; Dr Nafisa Qani, UNICEF, Badakhahan Programme Manager. Borrowed tent from UNICEF. Procured supplies for mission in the Faizabad bazaar and arranged for hire (with difficulty) 4-w-d Toyota double cab pickup for mission to Wakhan.

Overnight UNICA guesthouse Faizabad.

Day 6. Tuesday 24 September . Faizabad to Ishkeshem

Procured more supplies in bazaar. Made final arrangements with hired vehicle with owner Baharuddin. Finally able to depart Faizabad 12.00 hrs. 13.30 hrs lunch in Baharak bazaar, 15.50 hrs Warduj, 16.50 hrs Kazdeh, 17.45 hrs Zebak, 20.45 hrs Ishkeshem.

Overnight at Afghanaid base c/o engineer Abdul Ghaffar, site manager.

Day 7. Wednesday 25 September. Ishkeshem to Qala Panja

Rose 06.00 hrs. Tea. 08.00 met *waluswal* (district governor) of Ishkeshem, Mr Abdul Menan.Hashemi . Requested us not to proceed to Wakhan until our mission confirmed by radio with *vali* (provincial governor) in Faizabad. After confirmation proceeded on to Wakhan 10.10.hrs. Khandud 13.30 - lunch and picked up Mahmad Sabir (hunter/guide) and had discussions with locals and hunters about snow leopards, wild game animals ibex, urial and Marco Polo and agriculture. 15.15 arrived Qala Panja-met head of the Wakhi Ismailis in Wakhan-Shah Ismail. Delivered letter of introduction from FOCUS office in Faizabad. Arranged for horses and horsemen for onward journey into the Pamir-e-Kalan (the Big Pamir) the next day.

Overnight c/o Shah Ismael in Qala Panja village. Had more discussions on wildlife, agriculture, herding, local politics, and so on.

Day 8. Thursday 26 September. Ghaz Khan to Jangal-e-Gurvash: Big Pamir

Rose 06.00. Tea. Departed Qala Panja 07.30 by vehicle to Ghaz Khan via Syst bridge. Met up with horses and horsemen-Fazil Ahmad, Juma Khan, Md. Hassan, Assadullah, and Aziz. Loaded up horses, sent UN and hired pickup back to Faizabad. On the road by 09.30. Walked and rode. 11.00 hrs Prip Bridge across Pamir River to Tajikistan (Russian border guards). Dargow Kalan, valley and stream, Shab Dasht plateau, Isik Wada valley and stream. 16.15 hrs arrived at camping site by Pamir river at Jangal-e-Gurvash-elevation 3 290 metres asl. Erected UNICEF tent and made camp. Heavy rain in night.

Overnight-Camp at Jangal-e-Gurvash in riverine scrub by the Pamir River.



ANTHONY FITZHERBERT

Ghaz Khan region

Day 9. Friday 27 September. Jangal-e-Gurvash to Ishkemich Valley Zaman's camp. Big Pamir

Rose at 05.30. Bright cold morning after the rain. Tea. Struck camp. By 07.30 on the road walking and riding to Ishtamish Valley. 08.35 Porsan valley and stream-drovers camp (3 340 m). Khar Dasht plateau, Dasht-e-Schtvir plateau, (3 545 m), Samlak Dasht plateau (3 750 m), Zarnow Valley (3 785 m), Darghaneh Vazant Valley



ANTHONY FITZHERBERT

Jangal-e-Gurvash



CHARUDUTT MISHRA

Zamans camp

and Dasht-e-Varzant Plateau (3 700 m), Jamghoz Dasht Plateau (3 800 m), 15.30 hrs-entered Ishtamish Valley at Raish Kaigar (3 930 m). 16.00 saint's grave and ziarat at Faiz Razan decorated with horns of Marco Polo and ibex. 16.00 hrs arrived at Md. Zaman's aylaq (herding camp) (3 940 m).

Overnight c/o Md. Zaman and three other Wakhi herding families-Ramazzan (at Duar Khan in Ishtamish Valley). Discussions with herders. Overcast evening and snowed 6 inches in the night.

Day 10. Saturday 28 September. Ishkemich. Bottom of Khoshabad and Shikargah valleys. Bakhshah's Camp. Big Pamir

Rose 05.30 hrs. Tea. Dried out after the snowy night in leaky yurt (khergah)! Bright cold morning after snow. 09.30 left Zaman's aylaq. Rode up valley to Bakhshah's aylaq at Farak Shikar- arrived 10.00. Established our presence, drank tea, and 10.30 rode on further up the valley. Spied five mature male Ibex among snowy rocks on western slope of the valley. Spied for a while and then rode on to the junction of the Khoshabad and Shikargah valleys. Went to the top of the glacial moraine at the bottom of the Khoshabad Valley to good spying point. Spied 28 Marco Polo (ewes and lambs) high on eastern slope at the bottom of the Shikargah Valley. Rode on to closer spying point and spent some time spying at distance of about 8 to 900 metres at animals quite undisturbed. Started to snow again lightly, so returned to Bakhshah's aylaq (3 970 m), shared by four herding families - arrived back in camp 15.30 hrs.



Ishtemich valley region

Overnight c/o Bakhshah and other herders. Discussions with herders.



Shikargah valley region

Day 11. Sunday 29 September. Bakhshah's Camp to Shikargah Valley. Big Pamir

Rose 05.30 hrs. Night disturbed by wolves, barking dogs, and bleating sheep. Tea. 06.55 left camp and rode out for the Shikargah Valley. 08.40 Darreh Bey herding camp (4 255 m) at foot of glacial moraine. 09.10 Ganjab hunting camp (4 300 m), on morain. 10.30 Nowabad hunting camp (4 500 m)-signs of where bear had chewed up the willow slats in the roof and the door frame. 11.00 hrs. Junali drovers' camp at top of moraine (4 600 m). Riding in snow, tracks of Marco Polo, wolf, fox, and hares. Saw one hare. 12.30 spying point in rocks below the Hawz-e-Chap Lake, 4 700 m. Spied six mature Marco Polo rams at 400 m. Spent some time spying until they moved out of sight. Walked up to Hawz-e-Chap Lake (4 750 m). Light snow started, so left lake at 13.45 and reached Bakhshah's aylaq by 16.45 hrs. Total of eight hours in the saddle not counting time walking and spying.

Overnight c/o Bakhshah and other herders. More discussions. Fine cold night.



Chap Kol Lake in Shikargah valley region

Day 12. Monday 30 September. Ishkemich to Porsan camp. Big Pamir

Rose 05.30. Fine cold morning. Tea. Left Bakhshah's aylaq 08.30 and rode down to Zaman's aylaq to pick up UNICEF tent. 09.35 left Zaman's aylaq. 11.30 Varzant drovers' camp, tea stop. 13.25 hrs on road again. 15.00 hrs Zarnow valley and stream, 15.45 Porsan Valley drovers' camp and Md. Hassan and Juma Khan's aylaq and barley fields (3 400 m).

Overnight in drovers' hut. Discussions with herders. Fine cold night.



Porsan valley region

ANTHONY FITZHERBERT



Porsan valley region

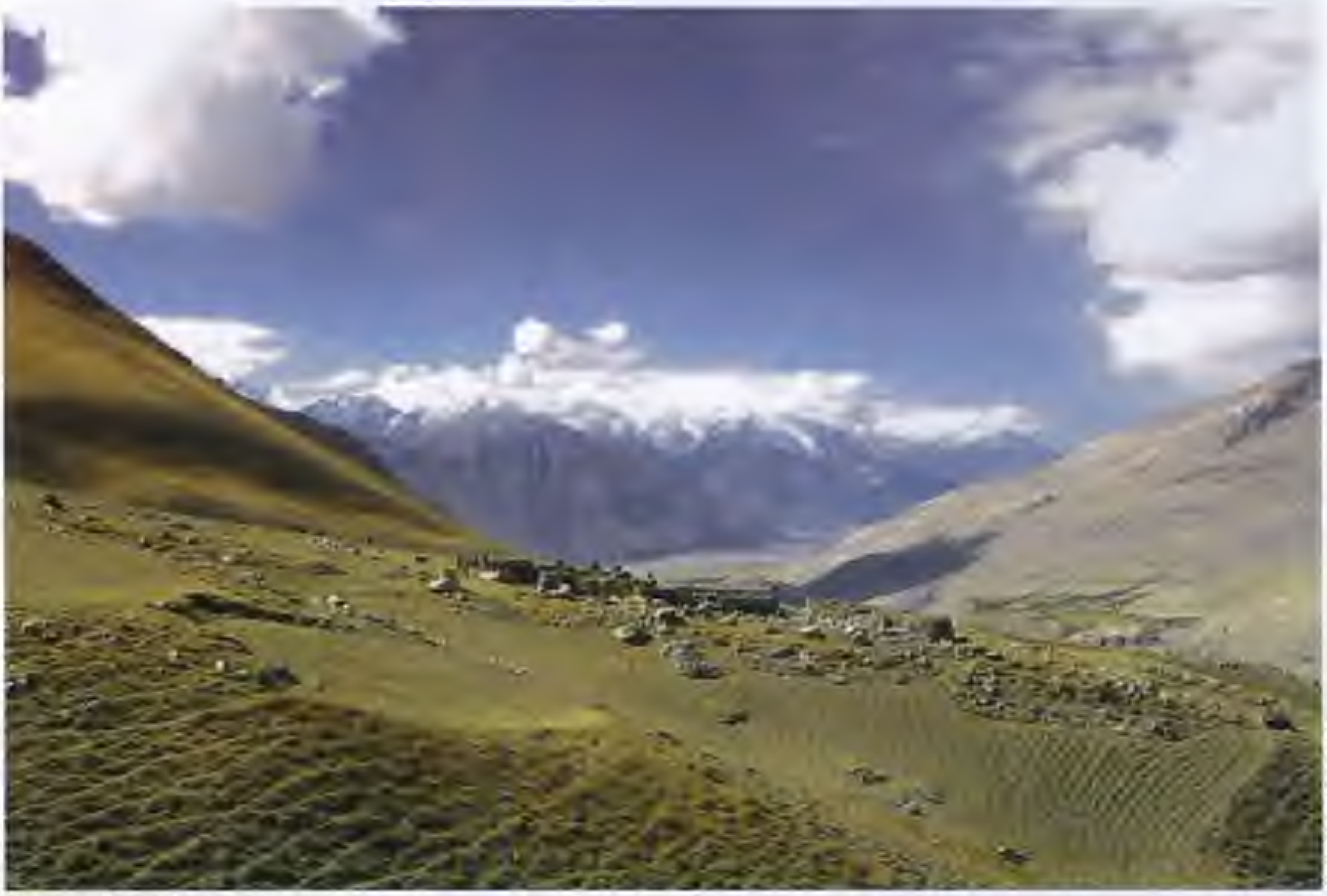
CHARUDUTT MISHRA

Day 13. Tuesday 1 October. Porann to Warwarm and Yupgaz. Big Pamir

Rose 06.30 hrs. Fine morning. Tea. 07.40 hrs left camp. 08.45 Jangal-e-Gurvash camp site, 08.45 Isik Wad Valley. Horses went long way round to Yupgaz Valley aylaq, while AK Md. Sabir, ARF, and CM climbed up onto the Dasht-e-Isik Wada plateau and walked to Yupgaz aylaq-(3 525 m). Arrived Yupgaz 11.00 hrs. Set up camp and erected UNICEF tent. 12.20 split into two parties: ARF with Md. Sabir going up the Yupgaz Valley and C.M. with A.K. and Fazil going up the Warwarm Valley.

ARF and MS climbed up to good spying point where we could see almost all the upper Yupgaz Valley. Tracks high up in the snow but could not spy any animals. CM and others in Warwarm Valley spied mixed-sex group of ibex as well as fresh tracks of snow leopard in the snow and many signs of snow cock.

All back in Yupgaz camp 16.30 hrs. Signs of brown bear and young (old droppings) in barley stubble. Fine cold night.



ANTHONY FITZHERBERT

Yupgaz valley region

Day 14. Wednesday 2 October. Yupgaz to Ghaz Khan. Ghaz Khan to Neshkaw. Big Pamir Wakhan Valley

Rose 05.30 hrs. Tea. Broke camp. 07.30 hrs on the road. 08.30 Dargow-e-Kalan Valley, 09.00 Prip River Bridge, 10.00 Shah Kanda ziyarat, 10.40 GhazKhan village. 11.45 pickup arrived from Qala Panja on other side of Wakhan River. 12.00 crossed river-paid off horsemen. 13.00 loaded pickup and set off up the Wakhan Valley towards the Pamir-e-Khord (little Pamir). 16.30 hrs arrived at Neshkow village. Stopped for the night with Md. Sufi.

Overnight in Neshkow village c/o Md. Sufi. Discussions with villagers. Fine night.



ANTHONY FITZHERBERT

Warwarm Valley region



CHARUDUTT MISHRA

Wakhan valley

Day 15. Thursday 3 October. Neshkaw to Sarhad-e-Broghil. Wakhan Valley. Broghil (Dekhan Khanah) Valley

Rose 05.45 hrs. Fine sunny morning. Earth tremor during the night. Tea. 07.00 hrs on the road. 08.25 hrs arrived Sarhad-e-Broghil village (3 400 m) (end of motorable road) up the Wakhan River. Established ourselves with Kachi Beg (Telefon!). Hired four horses and rode at 10.00 hrs out across the Wakhan River and up the Broghil (Dehkan Khanah) Valley. 11.45 hrs Dehkan Khanah aylaq. Spied and had discussions with herders and farmers harvesting barley. 12.45 on the road again. 13.25 Kachi Beg's aylaq at Zartgar (Sorkhgar) (3 550 m) looking up to the top of the Broghil Pass into Pakistan (Chitral). More discussions with herders and farmers. Walked up to Hawz-e-Zartgar Lake. Spied no wild animals. Returned to Sarhad-e-Broghil village. Had baths in hot sulphur spring 'hamam' ARF fished in the river without success.

Overnight in Sarhad c/o Kachi Beg (telefon). More discussions with herders and farmers.



Dehkan valley



Sarhad-e-Broghil area

Day 16. Friday 4 October. Sarhad-e-Broghil. Dalriz Pass

Rose 05.30 hrs. Tea. 07.20 set off by horse for the Kotal-e-Dalriz Pass. 08.30 reached the 'Maidan' plateau half way up the pass (4 000 m). 10.00 reached the top of the Dalriz Pass (4 425 m). Climbed further up on to the plateau to a good spying point up the Wakhan Valley to the Little Pamir to the Koh-e-Langar mountain. Md. Sabir went off scouting and came on 16 mixed-sex ibex asleep on a rocky shelf (3 males-oldest 6 yrs, 9 females and 4 young). Disturbed them. Further spying revealed nothing. Could do no more that day so left the top of the pass 12.00 and back in Sarhad 14.10. More discussions with herders and villagers. Settled with horsemen.

Overnight Sarhad c/o Kachi Beg (telefon). Fine clear night.



Top of Dalriz pass

Day 17. Saturday 5 October. Sarhad to Khandud via Wazut and Qala Panja

Rose 05.30. Tea. Departed Sarhad 06.35 hrs. Bright sunny morning. 10.20 arrived Wazut village. Met farmer Ayun Beg to get snow leopard story. 11.45 on the road again. 12.40 hrs arrived Qala Panja. Said goodbye and final discussions with Shah Ismael and picked up spare clothes. Had lunch. 14.10 on the road. Met Murad and UN pickup on the road driving up from Ishkeshem. 15.15 arrived in Khandud village and district centre. Established ourselves in drovers' rest house (mayman khanah) belonging to Abdul Hudud (Uzbeq). Had discussions with herders, traders, farmers and hunters).

Overnight Khandud c/o Abdul Hudud.

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Day 18. Sunday 6 October. Khandud to Faizabad via Ishekeshem, Zebak, Waduj, and Baharak.

Rose 06.00 hrs. Tea. 07.10 hrs left Khandud. 10.55 Ishkeshem. Visited bazaar. 11.30 hrs. on the road again. 12.40 hrs. Zebak - Kalkhan village. Lunch c/o Dr Hakim, UNAMA security officer. 13.25 hrs. on the road. 16.00 hrs. Warduj bazaar, 16.35 hrs Baharak bazaar, 18.15 Faizabad - UNICA guest house.

Overnight c/o UNICA guesthouse Faizabad.

Day 19. Monday 7 October. Faizabad

Faizabad. Visited bazaar. Meeting with FOCUS (Aga Khan Development Network) team to debrief on mission and discuss possible future environmental cooperation in the Wakhan and Pamir. Meeting with Dr Nefisa Qani-UNICEF. Returned tent. Paid pickup. Started writing up mission notes.

Overnight c/o UNICA guesthouse.

Day 20. Tuesday 8 October. Faizabad

Faizabad. Mainly writing up mission notes.

Overnight c/o UNICA guesthouse.

Day 21. Wednesday 9 October. Faizabad to Kabul via Kunduz

ARF, CM, and AK flew by UN plane to Kabul via Kunduz. Arrived early pm. Went to UNOPS office. ARF and CM had meeting to debrief with Deputy Minister of Irrigation, Water Resources and Rural Development, Dr Azizi. ARF met with acting FAO programme coordinator, Mr Tesfai Ghermazien, and debriefed on mission. In evening ARF met acting FAO Rep, Mr Ismet Hakim, and others.

Overnight Kabul-c/o UNICA staff house.

Day 22. Thursday 10 October. Kabul

ARF met with FAO staff and representative. ARF with CM and AK debriefed with Rahoul Chandran, programme officer UNOPS, in absence of Koen Toonen UNEP (on leave). ARF met (briefly) with UNDP Res Rep. Mr Ercan Murat, and Programme Officer Mr Knut Ostby. ARF and CM checked out animal fur market in Chicken Street. Confirmed air tickets to Dubai and other administrative matters.

Overnight c/o UNICA staff house.

Day 23. Friday 11 October. Kabul

ARF and CM debriefed with Pasi Rinne, UNEP Senior Policy Advisor. ARF and CM met with Dr Ron Petrocz, Environmentmental Management Adviser and expert of the Afghan Pamir from the 1970s, in Kabul on contract for ADB. Meeting included Mr Nigel Fisher head of UNAMA Pillar 2. Report writing, and so on. In evening dinner debriefing meeting organized by Mr Garry Halset, Programme Coordinator UNOPS Afghanistan, including ARF, CM, Dr Ron Petrocz, Mr Sultan Aziz (Special Advisor to Mr Brahimi, UN Representative Afghanistan), Mr Pasi Rinne (UNEP), Mr Rahoul Chandran, UNOPS.

Overnight c/o UNICA staff house Kabul.

Day 24. Saturday 12 October. Kabul to Dubai

ARF and CM flew by UN plane Kabul to Dubai. CM overnight in Dubai. ARF flew on to Geneva.

Day 25. Sunday 13 October. Dubai to Geneva to Manchester/Old Hutton, Dubai to New Delhi.

ARF flew 01.00 hrs. to Geneva via Zurich. Debriefing with Mr Henrik Slotte UNEP Geneva before flying on to Manchester UK. ARF arrived home-Old Hutton, Cumbria

19.30 hrs Sunday evening.

CM flew to New Delhi and beyond.

ANNEX 2: SUMMARY OF KEY PERSONS MET

1. GENEVA

UNEP in Geneva

Pekka Haavisto	Chairman Afghan Task Force
Henrik Slotte	Head of PCAU
Pasi Rinne	Senior Policy Adviser (also in Kabul)
Alain Retiere	UNOPS Consulting Services. Group Adviser

Aga Khan Development Network

David Nygaard	International Programme Director

2. KABUL

Ministry of Irrigation, Water Resources and the Environment

Dr. Ahmad Nuristani	Minister
Dr. Pir Mohommad Azizi	Deputy Minister

UNEP Mission Teams

Koen Toonen	UNEP Kabul Programme Manager
Mohammad Sayed	Programme Assistant
Mohammad Ajmal Nikzad	Assistant

FOREST TEAM

David Jensen	Team Leader
Jeff Sayer	International Expert
Martin Murray	International Expert
Abdullah Qaderdan	National Advisor

WATER/DESERTIFICATION TEAM

Rene Nijenhuis	Team Leader
David Fenton	International Expert
Neil Munro	International Expert
Mohammad Akbar Omari	National Advisor

NATIONAL PARKS/BIODIVERSITY TEAM

Peter Zahler	Team Leader
Chris Shank	International Expert
Ahmad Khan	International Expert
Abdul Wali Modaqiq	National Advisor

URBAN CONTAMINATION TEAM

Dennis Bruhn	Team Leader
Soren Hvilshoej	International Expert
Sandra Paniga	International Expert
Scott Crossett	International Expert
Sarwar Abbassi	National Advisor

FAO Kabul

Ismet Hakim	(out going) Acting FAO Representative Officer in charge
Serge Verniau	(in coming) FAO Representative
Tesfai Ghermazien	Acting Programme Coordinator

UNOPS

Garry Haslett	Programme Coordinator Afghanistan
Rahul Chandran	Programme Officer Kabul

UNAMA

Nigel Fisher	Head of Pillar 1 UNAMA
Sultan Aziz	Adviser to Mr Brahimi UN Respresentative Afghanistan

Asian Development Bank

Dr R. Petocz	Consultant and wildlife management expert, with previous experi ence in the Pamir.

3. FAIZABAD

UNAMA

Joe Kundi	UNAMA Kunduz and Faizabad
Abdullah	Office Manager Faizabad

UNICEF

Dr Nafisa Qani	UNICEF programme manager Badakhshan

FAO Fodder Production and Trials

Dr Kushwant	Officer

FOCUS/Aga Khan Development Network

Ghulam Panjwani	Programme Manager Badakhshan
Ahmad Ramin	Programme Officer Badakhshan

Afghanaid

Engineer Kamar	Site manager for Badakhshan

Ishkeshem

Abdul Menan Hashemi	District Governor

Qala Panja

Sayed Ismael	Ismaili 'Shah' and community leader.

Drivers

Murad	UNAMA Faizabad
Idris	Driver of Baharuddin's hired Toyota pickup

Guides and Horsemen

Md. Sabir	Hunter and Guide From Khandud
Fazil Ahmad	Horseman from Qala Panja and Ghaz Khan
Sayed Nur	Horseman from Qala Panja and Ghaz Khan
Abdul Aziz	Horseman from Qala Panja and Ghaz Khan
Assadullah	Horseman from Qala Panja and Ghaz Khan
Md. Hassan	Horseman from Qala Panja and Ghaz Khan
Juma Khan	Horseman from Qala Panja and Ghaz Khan
Juma Beg	Horseman from Sarhad
Nasir Ali	Horseman from Sarhad
Ghulam Sakhi	Horseman from Sarhad
Kachi Beg	Horseman from Sarhad
Md. Zaman	Ishtemich Valley first camp host
Bakhshah	Ishtemich Valley second camp host
Md. Hassan	Porsan Valley camp host
Juma Khan	Porsan Valley camp host
Md. Sufi	Nashkaw village, Upper Wakhan, host
Kachi Beg (telefon)	Sarhad village, Upper Wakhan, host
Abdul Hudud	Khandud village, Main Wakhan Corridor, host

Sundry herders, itinerant traders, and farmers met and spoken with all along the way.

ANNEX 3: POPULATION OF WAKHAN AND PAMIR BY VILLAGE

Population of the Wakhan and Pamir (source FOCUS/Aga Khan Development Network)
Wakhan District W = Wakhi. K = Kyrghyz

Village Name	Households	Population	Ethnicity
Abgarj	37	342	W
Achaqtash	3	17	K
Aeshmurghan	19	166	K
Aqjilghai Khord	5	25	K
Aust	114	1 001	W
Baytiburt	7	41	K
Beshkunuk	14	67	K
Birgitiko	5	21	K
Chartruk	8	44	K
Elghunoq	28	139	K
Fitur	57	436	W
Ghazkhan	17	149	W
Ichkili	7	35	W
Irghoil	11	55	K
Isteeq	19	104	W
Khandud	138	1 244	W
Kiskintash	6	29	K
Muqur	3	20	K
Pal Pkuy	38	324	W
Qala Panja	72	640	W
Pergish/Wergand	135	1 110	W
Petukh	50	405	W
Qala Mazar	7	41	W
Qara Jilga	8	41	K
Qara Qurum	11	55	K
Qara Dymyr	7	35	K
Qazi Deh	74	548	W
Qyzylituk	8	51	K
Roshan	123	1 036	W
Sarhad-e-Broghil	52	548	W
Sari Mughur	17	93	K
Sast	60	550	W
Shawr	17	108	W
Shikawr	59	454	W
Tash Buloq	10	57	K
Tikilik	9	39	K
Tirgynghurum	16	78	K
Uch Jilga	11	57	K
Warq	49	369	W
TOTAL	1 331	10 574	
Kyrghyz	206	1 130	
Wakhis	1 125	9 444	

ANNEX 4: GLOSSARY OF LOCAL NAMES, TERMS AND CALENDAR

Note: This list is of course far from complete but might prove a useful guide to future missions for some essential names.

Table 1. Livestock

English	Persian	Wakhi	Kyrghyz
Bull	gav-e-nar		bogha
Cow	gav / gaw	chat/jalagach	oyi
Calf	gusale		torpok
Plough ox	gaw-e-golbe		oghuz
Yak	ghaj gaw	kotuz	topaz
Bull			ygiz
Cow			ynik
Calf			yit
Ram	gooch / koch	warr	kochkor
Ewe	mish	may	koy
Lamb	barreh	work	koze
Billy Goat	boz-e-nar(tekke)	tekke	
Nanny Goat	boz	tooq	Ichle
Kid	bozgaleh		olaq
Stallion	asp or asp-e-nar		at
Mare	madian		jilke /julgu
Foal	korre		tay
Donkey	khar, olaq, makhab		ishek
Camel (in this case Bactrian)	shotor		
Summer herding camp	yeilaq or aylaq	aylaq	jayloo
Winter settled camp or village	gheshlaq	gheshlaq	kishlaq
Yurt	khergah	khergah	boz ooyi

Table 2. Wildlife

Common name	Scientific name	Persian	Wakhi	Kyrghyz
Leopard	*Panthera pardus*	palang	palang	
Snow Leopard	*Uncia uncia*	palang-e-barfi or khar palang		jylbyz
Lynx	*Lynx lynx*	siah gush		
Leopard Cat	*Felis Bengalensis*	azada palang	azada palang	
Brown Bear	*Ursus arctos*	khers	nogordum	ayu
Grey Wolf	*Canis lupus*	gork	shapt	karsishki
Red Fox	*Canis vulpes*	rubhar	nakchir	tulku
Marmot (long tailed in this case)	*Marmota caudate*	wynduk	wynduk	suur
Hare (probably Cape Hare in this case)	*Lepus capensis*	khargush		
Marco Polo (Ram)	*Ovis ammon polii*	kochkor	rowsh warr	arkhar

Table 2 (part2). Wildlife

Common name	Scientific name	Persian	Wakhi	Kyrghyz
Urial Sheep	*Ovis orientalis vignei*			
(ram)		kooch-e-gadi		
(ewe)		mish-e-gadi		
Ibex (Siberian)	*Capra ibex sibericus*			
(male)		boz-e-kohi / ahu-e-rung	yuksh / rung	tekke
(female)		boz-e-kohi		

Note: the generic term 'ahu' is often used for both ibex and urial and can be equated with the English term 'game' as in 'game animals.' N.B. In Iran the word 'ahu' usually means specifically gazelle but can be used generically for other game animals; in Iran the word 'shikar' is also used for 'game animals' as well as for 'hunting.'

Table 3. Main Crops

Common name	Scientific name	Persian	Wakhi	Kyrghyz
Wheat		gandom		bugday
Barley		jaw		arpa
Millet		arzan		
Potatoes		catchaloo	ditto	
Broad Beans	*Vicia faba*	baghala	ditto	
Grass Pea	*Lathyrus sativus*	patak	ditto	
Field Pea	*Pisum sativum*	myshing		
Persian Clover	*Trifolium resupinatum*	shaftal	ditto	
Lucerne	*Medicago sativa*	reshka	ditto	

Table 4. Institutional Personalities

English	Persian	Wakhi	Kyrghyz
Provincial Governor	Vali		
District Governor	Waluswal		

Table 5. Units of Weight, Measure and Value

Term	Value
1 jerib	1/5th hectare or 1/2 an acre approximately
1 ser of Kabul	7 kg
1 Dowlati (Afghani)	Official unit of government currency
1 Jymbysh (Afghani)	Unit of Afghan currency acceptable in Northern Afghanistan including Badakhshan worth 1/2 Dowlati
1 Kaldar (lit with a head)	Afghan term for a Pakistani rupees dating from British Indian times when the Indian rupee had the British monarch's head on it

Table 6: Afghan/Gregorian Months

Afghan Month	Gregorian Equivalent
Hamal	21 March to 20 April
Saur	21 April to 21 May
Jawza	22 May to 21 June
Saratan	22 June to 22 July
Asad	23 July to 22 August
Sunbullah	23 August to 22 September
Mizan	23 September to 22 October
Agrab	23 October to 21 November
Qaus	22 November to 21 December
Jadi	22 December to 20 January
Dalwa	21 January to 19 February
Hud	20 February to 20 March

ANNEX 5: WILDLIFE ANECDOTES

The following annex gives brief accounts of mainly well-corroborated stories involving encounters and confrontations between the local Wakhi people of the Wakhan Corridor and the Pamir and some of the larger wild animals with whom they share their environment.

Those involving snow leopards and wolves are largely confrontational, as they have mainly occured when these predators attack the farmers' and herders' domestic livestock. Those involving brown bears are mainly encounters of mutual respect, but unfortunately also include random and purposeless killings by local hunters out hunting ibex and other game for meat, who come across a bear and cannot resist having a shot at it. Other stories assumed something of the fabulous, such as sightings of the Azada Palang, possibly the leopard cat (*Felis bengalensis*), which local legend claims to have an extra claw in its tail! Those involving the wild game animals, Marco Polo, urial, and ibex all involve hunting expeditions, primarily for meat, but also stories of general observation and simple sightings.

A. Snow Leopard Stories

Most of these accounts of snow leopards are concentrated at the eastern end of the main Wakhan Corridor from Kazdeh to Khandud and particularly between Khandud (the district administrative centre of Wakhan) and Qala Panja (where the Panj River divides into the Pamir-e-Kalan and the Wakhan) and the settlements up the Wakhan River towards the Pamir-e-Khord. By all accounts a number of the valleys along the Wakhan hold a reasonably healthy population of ibex and probably also urial. These are the easternmost spurs of the Hindu Kush where the ridge of the mountains/the watershed forms the frontier between Afghanistan and Pakistan (Chitral). It is in these mountains that the main population of snow leopard appear to reside, rather than in the Pamir region itself. It is in this area in particular that from time to time they come into conflict with the local Wakhi farmers and herdsmen especially during the hard months of winter.

The local name for the snow leopard is Khar Palang, which means 'donkey leopard.' This is no compliment to what the local Wakhis think of the animal's intelligence. They consider the animal to be rather stupid because when a snow leopard gets into a stock corral, it often kills hysterically and massively until exhausted, and it is often easily killed by the villagers while in this state. The common leopard (not common in this area but which may occur elsewhere in Badakhshan and certainly in Nuristan) usually kills selectively and silently and usually only takes single animals.

1) Hayatullah's Story-Khandud village-1999 Afghan month of Qaus (22 Nov. to 21 Dec.)

As told by himself with local corroboration.

Hayatullah is a local hunter from Khandud whom we interviewed in Khandud on our way up the Wakhan.

In 1999 in the Afghan month of Qaus, Hayatullah was out hunting ibex for meat. He wounded a female ibex late in the day. As he could not get it that day, he went out the next day to look for it. He found it dead with a snow leopard feeding on it, so he killed the snow leopard with three shots from his AK-47. It was a male. He later sold the skin to an itinerant livestock merchant for 10 lak Afs. (*jymbysh*, approx. US$ 15). The cheap price may be accounted for by the possibility of the skin's being messed up by so many shots. No other body parts were sold. The carcass was just left out for the dogs, crows, and vultures.

2) Fazil's Story-Qala Panja-1999 Afghan month of Qaus-in fact, exactly Qaus 15th (7 Dec.)

As told by himself with local corroboration, including that of Shah Ismael, the local Ismaili leader, in whose residence in Qala Panja we heard the story.

Fazil is a local *buz kashi* champion or *chapandoz*, and was one of our horsemen on our journey into the Pamir-e-Kalan. A 'bit of a lad', he is also an occasional hunter. This story was repeated in a number of places.

It occurred in 1999 in the middle of the month of Qaus.

For some time a snow leopard had been killing domestic stock in their corrals and stables, at night, in a number of neighboring villages with impunity. It may have killed as many as 200 animals in total. This snow leopard was suspected of having killed stock in the following villages along the Wakhan strip-Ishmorg, Yamit, Urgan, Shawr, Wark, Kazdeh, and Qala Panja.

On the night of the 15th Qaus a snow leopard (almost certainly the same animal) got into one of the sheep pens in Qala Panja and killed 15 sheep and goats. The villagers were roused by the noise. Fazil shot the leopard with an AK-47. It was a female. Later he sold the skin to an itinerant general trader for 8 000 (*kaldar*) Pakistani rupees (approx. US$ 140). No other body parts were sold. The carcass was just left out for the dogs and the crows.

3) Mahmad Sabir's Stories-Khandud

As told by himself and corroborated by others in Khandud including Shah Ismael.

Mahmad Sabir is a very skilful local hunter and small farmer. He was our excellent guide on this mission into the Pamir, which he knows intimately. His understanding of the wildlife and where to find it, his skill at spotting animals at long distance without binoculars, as well as his knowledge of 'ground' and how to use it was entirely in the best traditions of a skilled '*shikari*.' A charming and considerate character, he also appointed himself as the mission cook, at which he excelled. This proved, once again, to myself (ARF) from previous experience, that such people are usually good cooks in difficult situations! He is someone we felt would make the very best type of game warden if a serious programme becomes possible.

M.S's Story No.1 involved a snow leopard that Md. Sabir had shot in 2000 in the month of Hud (20 Febuary to 20 March).

A snow leopard got into the sheep pens at night and killed ten sheep. The owners called Sabir out of his house and he shot it with an AK-47. Later he sold the skin to a traveling Tajik itinerant trader for 40 lak Afs (*jymbysh*, approx. US$ 60). No other body parts were sold. The carcass was left out for the dogs and crows.

M.S's Story No. 2 involved a local incident in which Md. Sabir was not personally involved.

The incident occurred in 1998 during the winter on the mountain behind the small village of Pokoi. The month was unspecified. One winter's day near the small settlement of Pokoi, three neighbours were out together on the scrubby mountains near the village gathering brushwood for fuel. One of the men, a little distant from his friends, was suddenly attacked by a snow leopard. His friends came to his rescue and killed the leopard with their axes and mattocks. It was a very old male without any canine teeth, which helps to explain its unusual behaviour. (Unlike with the common leopard, cases of man-eating snow leopards are almost unheard of.) The skin was sold to an itinerant general trader. No price was stated. No other body parts were sold, the body being left for the vultures and wolves.

This story was also recounted by others in Khandud.

4) Ayum Beg's Story-Wuzut village- 1999 Afghan month of Jadi (22 Dec. to 20 Jan.)

The village is near the beginning of the upper Wakhan road to Sarhad-e-Broghil and the Little Pamir. The story is as told by himself and corroborated by others.

We were first told this story when staying in Sarhad-e-Broghil at the end of the upper Wakhan. Later on our return journey to Qala Panja, we called in at Wazut village to have the story confirmed by the individual concerned. The story we were told in Sarhad had got some of the details of the story wrong, but essentially the story was the same given to us by Ayum Beg himself, which is the one told here. Ayum Beg is a small farmer and herder cultivating some wheat and pulses and owning some sheep, goats, yaks, and cattle as well as donkeys for transport. He sends his livestock to an aylaq in the Pamir-e-Kalan in the summer, but in winter they graze round the main settlement-*gheshlaq*, being housed at night in a roofed stable.

The incident occurred in 1999 during the Afghan month of Jedi

One cold winter's night a snow leopard clawed its way through the roof of the stable in which Ayum Beg houses his livestock and which directly adjoins his house. No one in the house heard anything. The leopard killed 3 sheep, 67 goats, 3 young cattle, and 2 donkeys-in fact, all the animals being stabled together. Fortunately his two milk cows and their calves were in a separate room divided by strong wooden door. When the family got up in the morning, they heard the cows making noises of distress, went out to let the animals out, and found the scene of carnage. It is very likely that in their panic many of the animals died of suffocation as well as by direct killing by the leopard. Ayum Beg said he found them all piled up. The snow leopard had escaped the way it got in, through the roof.

We were shown the stable, which had a rather flimsy and inadequate roof, quite possible for a determined snow leopard to claw through. As Ayum Beg's own house has a perfectly adequate 'leopard-proof' roof made of strong interwoven willow branches, we asked him why, after this experience, had he not rebuilt the roof of his livestock stable in like fashion, especially as it housed his 'wealth.' He gave no adequate answer, but we also suspected that the family may also have a problem with opium addiction, like many in that region. (We have a photograph of Ayum Beg in his stable looking at the roof.)

We have no proof, of course, but this could possibly be the same animal as is killed in the next story. We asked if it might have been the same as the serial killer shot by Fazil in Qala Panja, but this was not thought to be the case.

5) Mast Ali's Story-Ghaz Khan-1999 late winter

Story told to us by Ayum. Later confirmed in Qala Panja.

Ghaz Khan is the next village downstream from Wazut, on the right bank of the Wakhan. It is where we picked up our horses to go up into the Pamir-e-Kalan. Unfortunately, we only heard this story later when it was too late to return to Ghaz Khan to meet Mast Ali and get his version. The snow leopard is possibly the same as the one that killed Ayum Beg's stock. The villages are not far apart, and the timing would also fit.

We first heard the story from Ayum Beg of the previous story but later checked it out in Qala Panja and had it corroborated by the sons of the Ismaili leader, Shah Ismael, who also corroborated Ayum Beg's story and others.

The incident occurred in 1999 during the winter. The date and month are unspecified, but it occurred not long after Ayum Beg's incident, so possibly in the Afghan month of Jadi (22 Dec. to 20 Jan.).

At night a snow leopard got through the roof of Mast Ali's stable, but this time the household heard a commotion and got up. They found the snow leopard in the stable attacking the animals, so they attacked the leopard with axes and spades and killed it. The skin was sold to an itinerant trader for an unknown sum. The sex of the leopard is not known.

6) Ostad Ayaz Gul's Story-Qala Panja-2000 Afghan month of Dalwa (21 Jan. to 19 Feb.)

As told to us first by Ayum Beg and later corroborated in Qala Panja by Shah Ismael's sons.

We had been told the gist of this story first also by Ayum Beg and checked it out in Qala Panja. Ostad Ayaz Gul himself could not be found, but we were told the story by Shah Ismail's son. As many villagers were involved, it is a common story.

The incident occurred in the year 2000 in the Afghan month of Dalwa. One early morning the women of the household of Ostad Ayaz Gul went to let the stock out of their stable. The cattle were making a great noise. One of the women went cautiously into the stable, which was very dark (as they all are), and saw the bodies of several dead sheep and the outline of the snow leopard. She shut the door and called the men who came and quickly killed the leopard with axes and spades. It was a male.

The skin was later sold to an itinerant general trader for 5 000 (*kaldar*), (approx US$ 85); no other body parts were sold. The carcass was left for the dogs and crows.

7) Adin Beg's Story as told by the sons of Shah Ismael-Khosh Nazar aylaq (summer herding camp)-2002 Afghan month of Mizan (23 Sept. to 22 Oct.)

As recounted by one of Shah Ismael's sons in Qala Panja.

Adin Beg, a local herdsman from Qala Panja, lost two goats to a snow leopard while grazing up on the Khosh Nazar aylaq only a week or so before we arrived. The leopard got away.

8) Sayed Afzal's Story-Qala Panja-2002 (this year) Afghan month of Hud (late February/early March)

As recounted by himself in Qala Panja and corroborated by others who were present.

Sayed Afzal, a senior village dignitary, in Khandud related this story, which was also witnessed by five or six other people in the village.

One day in February or March of this year, Sayed Afzal had as usual sent his large stock (yaks and cattle) to graze on the mountains behind Qala Panja village. Yaks and sometimes cattle too often graze at large without a herdsman in attendance. The animals were grazing at some distance away from the village when people noticed something going on and fetched binoculars. Through the binoculars they (about five or six people) watched while two snow leopards (clearly a courting pair) killed some of Sayed Afzal's stock, including four female yaks, three cattle, and one young bull. There was still snow on the ground at the time, and although the incident occurred in broad daylight, it was too far up the mountain for anyone to be able to do anything. The leopards went off.

9) Abdul Hudud's Stories-Khandud-from a number of years ago

These stories were told by Abdul Hudud, an Uzbeq trader from Kash district in Badakhshan, who has taken up residence in Khandud. He owns the local 'peddlers' rest' (*mayman khanah*), where we stayed a night on our return from the Pamir. Abdul Hudud is also an occasional hunter and has close friends among the Kyrghyz, with whom he can communicate more easily than most of the Wakhis, as both the Uzbeqs and Kyrghyz speak Turkic tongues.

A.H.'s Story No. 1 probably occurred in either 1988 or very early 1989.

Thirteen or fourteen years ago, during the latter days of the Soviet occupation of the Wakhan, Abdul Hudud was on the Koh-e-Pygysh mountain in the main Wakhan strip hunting ibex. A Soviet helicopter flew very low overhead and disturbed a snow leopard hiding among the rocks. Abdul Hudud shot it and sold the skin to an itinerant trader for 15 lak Afs. (at that time worth about US$60). No body parts were sold.

A.H.'s Story No. 2 probably occurred in 1991 or very early 1992, month of Saur.

Ten or eleven years ago-1991 or very early 1992-while the forces of Dr Najibullah were still occupying Wakhan, a friend and neighbour of Abdul Hudud, Wali Khan, was grazing his stock up the Khandud Valley. At 16.00 in the afternoon a snow leopard attacked Wali Khan's sheep. Wali Khan, who had no gun, ran to Abdul Hudud's house for help. Abdul Hudud shot at the leopard and seriously wounded it, but by that time it was getting dark and they did not dare follow it up. The leopard lived for several hours but was dead by the time they went out in the morning to look for it.

He gave (free) the skin to an Afghan security officer in the Najibullah forces.

10) Zaman's Story- Big Pamir- Shikargah Valley-2001

As recounted by Zaman.

Zaman and his family and co-herding families graze their stock in the Pamir-e-Kalan in the Ishtemich Valley. We stayed our first night in Ishtemich in their encampment.

Asked when he had last seen a snow leopard, he said that it was last year about this time (Mizan) four hours' ride away, up in the Shikargah Valley, near where we saw the Marco Polo rams.

Neither Zaman nor Bakhshah, with whom we stayed two nights in the same area, considered snow leopards in this area to be menace to domestic livestock. Their main problem is with wolves, which regularly take stock. (See Wolf stories).

11) Sufi's Story-Neshkow village-Upper Wakhan on road to Sarhad-e-Broghil

As recounted by Sufi.

We stayed a night in Neshkow on our way to Sarhad with Sufi, a small farmer growing wheat, barley and pulses and herding sheep, goats, cattle, a yak or two, and so on.

Asked about snow leopards in this part of the mountains towards the foot of the Pamir-e-Khord, he replied that generally they do not have a problem and there had been no incidents in recent years. In his opinion there was plenty of game (*ahu*) in the area, so the snow leopards did not need to take domestic stock.

12) Marco Polo Horns on the Faiz Rason ziyarat on the way up the Ishtemich Valley to Zaman's camp

Most Marco Polo winter kills of mature rams in Shikargah appear to be from wolves; however, at the ziyarat (saint's grave) of Faiz Rason on the way up the Ishtemich Valley, which is piled high with a massive collection of Marco Polo and ibex horns, we found one recent addition of a seven-year-old ram, which we were told had been killed by a snow leopard.

13) A Driver's Story

Two years ago a senior person in the UN visiting Badakhshan and Wakhan bought two snow leopard skins to be made into coats and waistcoats. We think that Mr Brahimi's attention might be drawn to this and a general instruction issued as part of a general briefing to all UN personnel and consultants that the purchase as well as the sale of furs, especially of endangered species such as snow leopard, is in breach of international agreement and must NOT happen. This was brought to the attention of Mr Nigel Fisher, UNAMA Pillar 2, on our return to Kabul-who agreed.

14) The Mission's Own Observations

First Observation of Snow Leopard Tracks: On 1 October when camped at Yupgaz, we split into two parties. Dr Mishra went with Assadullah Khairzad and Fazl up the Warwarm Valley and Fitzherbert with Md. Sabir went up the Yupgaz Valley. Northwestern end of the Pamir-e-Kalan.

Dr Mishra's party found fresh snow leopard tracks in the snow, which they followed for a short while. They also saw a mixed herd of ibex. Fitzherbert and Md. Sabir found the Yupgaz Valley empty on that particular day, but could spy ibex tracks among the snow on the ridges.

Second Observation of Snow Leopard Tracks: On 4 October walking up a stony gully towards the top of the Kotal-e-Dalriz Pass at the western end of the Pamir-e-Khord near Sarhad-e-Broghil, we observed snow leopard tracks as well as wolf, marten, fox, and hare in the snow. This path provides the easiest route to the top of this pass and is used by both beast and man!

Comment

The majority of these stories are located at the eastern end of the main Wakhan strip that extends from Ishkeshem to Qala Panja and a few kilometres further on up the Wakhan Valley in the direction of Sarhah-e-Broghil. Had we been able to spend more time in other locations in the western Wakhan and further east in the Pamirs with the Kyrghyz, no doubt we would have heard many more stories and added to our knowledge.

While the Wakhis have no great tradition of wearing furs, the Kyrghyz certainly do, both as winter fur-trimmed hats (usually fox or lynx trimmed tebete) and coats, and as decorations for their yurts (*khergah/boz ooyi*). Certainly in old Kyrghyz tradition, the Khans and Bays would demonstrate their wealth by lining the whole of the interiors of their yurts with snow leopard skins. As we were not able to reach the Kyrghyz in the time available, we could not find out at firsthand this time what the situation really is like in the far eastern Pamir in this as in many other respects, except by hearsay.

The majority of the anecdotes recounted here also involve incidents in which villagers have, understandably, killed snow leopards in defense of their livestock. Other killings were occasional and opportunistic. We came across no evidence of any deliberate commercial hunting or trapping for snow leopard skins. We came across no evidence of selling other body parts. Indeed the very suggestion of trading flesh and bone was treated with surprise, disgust, and bewilderment. It would be interesting to see if this also applies among the Kyrghyz of the Little Pamir who live close to the Chinese border.

The sale of the snow leopard skins in the anecdotes recorded above has again been mainly to the itinerant general traders, drovers, and peddlers who ply their business in these remote regions. These people are an important feature of the social landscape and come up from lower Badakhshan and Takhar and also from Mazar-e-Sharif, Baghlan, and even beyond, with their pack horses and donkeys with everything from clothes, shoes and boots, tea, salt, pens, batteries, needles, scissors, and so on, to exchange for livestock or dairy products in the absence of settled bazaars. In no case that we came across had a sale been made to a professional fur trader, although this, of course, does not mean such people do not exist.

Table 1. Ten instances of killing snow leopards were recorded. In all instances, the animals were skinned, and the furs later sold or given away.

	Year	Area	Location	Sex	Buyer	Amount
1	2002	Ghaz Khan	Corral	-	Unknown*	Unknown*
2	2000	Kala-i-Panja	Corral	M	Tajik trader	Bartered for oil
3	2000	Khandud	Corral	F	Tajik trader (Faizabad)	US$60
4	2000	Kala-I-Panja	Corral	M	Trader	US$140
5	1999	Khandud	Pastures	M	Pakistani trader (Chitral)	US$15
6	1999	Qala-i-Panja	Corral	F	Trader	US$140
7	1998	Khandud	Pastures	-	Unknown*	Unknown*
8	1997	Gorvash	Pastures	-	Afghan doctor (UN)	Unknown
9	1992	Khandud	Pastures	-	Security officer	Unknown
10	1989	Pugish	Pastures	-	Trader	US$60

**skin was sold but the price and/or identity of buyer unknown*

B. Bear Stories

Generally all the herdsmen we met or stayed with agreed that the brown bears of the Pamir do not bother the domestic herds and flocks at all. The usual comment made was along the lines of "We are afraid of the bears and they are afraid of us. We keep out of each other's way." Sightings of bears, more often of she bears with cubs, are not infrequent occurrences for the mountain herders. Everyone agreed that their main diet is vegetable matter supplemented by marmots and voles, and in the autumn they often descend to the thin strip of riverine woodland and scrub, mainly along the Pamir and Wakhan rivers where there are berries (rose-hips, sea buckthorn, wild currants, and others). No doubt they also share in scavenging remains of dead wild sheep and ibex revealed by the spring thaw. One story indicates that dead animals comprise part of their diet.

Although deliberate hunting parties after bear do not seem to be a feature of the local Pamiri scene, hunting parties out after Marco Polo, ibex, and urial for meat do often tend to shoot at a bear if they come across one during their hunt. The opportunity seems to be irresistible. However, those who told us stories related below could provide no rationality for it beyond the hunt. One of these stories does refer to a very recent incident concerning the district governor of Wakhan (woluswal), a man named Payman, who shot a bear in the Little Pamir in flagrant contravention of the current hunting ban, which the majority of the population is abiding by.

The positive message we can bring back is that there seems to be enough anecdotal evidence to indicate a rather healthy population of brown bear in the Pamir. We ourselves found bear scat from an adult and cub in the barley stubble close to the Yupgaz aylaq, which was our last cam in the Pamir-e-Kalan. The local herdsmen said that the bears had come to eat the green barley. These signs were no more than 30 metres from the nearest dwelling. We also found bear teeth and claw marks on the door frame and willow roofing of the old hunting camp at Ganjab in the Shikargah Valley.

Prior to the Soviet invasion and the collapse of the Afghan state, hunting brown bears in the Afghan Pamir was completely forbidden.

1) Bakhshah's Story-Shikargah Valley-Pamir-i-Kalan

As told by himself.

Bakhshah is the head of the herding group we stayed with for two days in the Ishtemich Valley and from where we rode out to see Marco Polo sheep in the Shikargah Valley.

A year or two ago, Bakhshah was with a local hunter up in the rocks in the Shikargah Valley not far from the Ganjab hunting camp, where we also saw signs that a bear had chewed on the door frame of a ruined mountain shelter. They spotted a she-bear with two cubs. The hunter had two shots at the she-bear but fortunately missed.

2) Zaman's Story-Shikargah Valley- Pamir-I-Kalan

As told by himself.

Zaman is the head of the herding group where we stayed the first night when we first entered the Ishtemich Valley.

One month earlier (in September of this year), Zaman saw a she-bear with two cubs one hour's ride up into the Shikargah Valley. They each went their separate ways.

3) Juma Khan's Story-Porsan camp-Pamir-e-Kalan

As told by himself.

Juma Khan was both one of our horsemen in the Pamir-e-Kalan with his herding partner Md. Hassan. We stayed a night in their aylaq/drover's rest near the Porsan Valley on our return journey out from the Pamir-e-Kalan.

Last year a horse died out on the mountain. A few days later they saw a she-bear with two cubs feeding on the dead horse. The herdsmen shouted and clapped and the bears made off.

4) Yupgaz camp

Yupgaz camp and aylaq was our last camp before leaving the Pamir-e-Kalan, from where we went up the Yupgaz and Warwarm Valleys. Here we found bear scat (not fresh) of one adult bear and one cub in the barley stubble within no more than 30 metres of the herders' houses. We were told they liked the green barley when in ear.

5) Farmer in Ghaz Khan village-the other day! (late September 2002)

Ghaz Khan is the village where we picked up our horses to ride into the Pamir-e-Kalan.

The villagers of Ghaz Khan were busy with their wheat harvest when we came through. Quite recently a farmer came out in the morning and found all his carefully stacked sheaves of wheat scattered all this way and that. At first he thought it was the work of mischievous children; then he understood the true identity of the mischievous person when he found the tracks of a bear in the dust around his once tidy stack.

6) Sufi's Story-Neshkow village Wakhan Valley toward Sarhad-e-Broghil

Sufi was our host on the way to Sarhad and Pamir-e-Khord.

On being questioned about bears in this locality, Sufi replied that the herdsmen do see bears from time to time and do not consider it to be very unusual.

7) The Story of the Woluswal of Wakhan in Khandud

We heard this story in Sarhad-that two weeks earlier the district governor of Wakhan, Payman, had been in the area and had shot and killed a bear in Bahrak in the Wakhan Valley upstream of the Dalriz Pass-this despite the well-recognized current ban on hunting.

8) Abdul Hudud's Story

Abdul Hudud is an Uzbeq trader and occasional hunter and our host in Khandud.

Two years ago in 2000 Abdul Hudud had gone on a trading trip to the Kyrghyz in the Little Pamir. One day he was out hunting Marco Polo with a Kyrghyz friend when they spotted a she-bear with two cubs. They were still some distance away. He had a carbine (a rifle) with him and fired two shots and wounded the old bear, which spotted them and came after them. The Kyrghyz fled up into some rocks, but Abdul Hudud had a third shot and wounded the bear again. She then made off with her cubs towards some rocks, leaving a blood trail. Evening was drawing in so they made for home. They returned the next day with some dogs and other people, but they never found the bears.

When Abdul Hudud had finished telling us this story, we asked him why he had shot at the bear, particularly a mother bear with cubs, and asked him what problems the bears caused the local herds.

He really had no logical answer except that they were out hunting.

Final Comment

There is general agreement in the Pamir area that the local brown bears do not bother their human neighbours, and on the whole both sensibly keep their distance from the others and hold each other in appropriate respect.

Unfortunately, however, the main danger to bears in this region is not deliberate hunting but casual killing by locals when out hunting game for meat, just because they cannot resist having shot at a bear if they see one. The doubly unfortunate thing seems to be that if the stories we heard are typical it is more often she-bears with cubs that are seen rather than mature males.

It is interesting that although this is far too small a sample of stories from which to draw conclusions, it seems that most herdsmen's bear sightings are of she-bears and cubs- and almost always two cubs.

Both Dr Mishra and Fitzherbert expected to be regaled with stories of he-bears carrying off young village girls to their caves. Such mythical stories are commonly told in the Himalayan states and Nepal where Dr Mishra has worked, and Fitzherbert heard similar tales told in the Alborz Mountains in Iran and in the eastern Black Sea Mountains in Turkey. This does not appear to be among the popular local myths of the Pamir, although there are certainly others.

In Iran Fitzherbert has at first hand met cases of brown bears acquiring a bad habit of killing domestic sheep and goats. Usually these were old males who carried out their killings at night and very boldly, because the shepherds had no arms and their dogs are usually very afraid of the bears. Fortunately, here in the Pamir we came across no evidence of this happening at all.

In both Iran and eastern Turkey, brown bears find it almost impossible to resist fresh fruit when apples and apricots in particular are ripe in the village orchards, and they can do a lot of damage. If there is a transhumance beekeeping tradition as in Turkey, even the greatest ingenuity of the beekeepers is often to no avail in keeping bears from trying to get at the hives out on the '*yayla*.' Again fortunately, in the case of the Pamir, those kinds of manmade temptations are not available to create a zone of conflict.

C. Wolf Stories

The main predator of the domestic herds and flocks in the Big Pamir is the wolf rather than the snow leopard. We never heard of stock losses from lynx, and as we have described, brown bears in the Pamir seldom if ever bother the domestic livestock.

Everywhere we went and stayed we were regaled with wolf stories, most of them very recent, and on one night in Bakhshah's *aylaq* in the Ishtemich Valley, our sleep was disturbed by barking dogs and bleating sheep and a certain amount of confusion as a wolf or wolves were driven off.

In the Pamir wolves not only take sheep and goats when they can avoid the shepherd dogs, but also commonly cattle and yaks, although usually not the large mature males.

In the mountains, unlike in many of the settled valleys, cattle as well as yaks, camels, and horses are expected to graze off by themselves during the day, without a herdsman or protecting dogs. They customarily return to the camp by themselves at nightfall, but not always unless they are milking animals. It is often when grazing off by themselves in this way that they are attacked, often in the daytime. Attacks on camps and corrals are generally at night.

We were told of attacks by anything from single wolves, to pairs, to family groups of four or five, to packs of up to ten or more.

Although wolves do come closer to the valley settlements in the winter, the herdsmen on the aylaq appear to see wolves on a regular basis all through the summer and autumn.

1) Shepherd with large mixed flock of sheep and goats of about 250, spoken with on first day's march to our camp at the Jangal-e-Gurvash-Pamir-e-Kabir

Ten days earlier on about 20 September (2002), they lost three cattle while they grazed up the mountain. This was a pair of wolves hunting together. They lost one animal during the day, and a day or so later they lost two more at night. It should be noted that the local cattle are very small and light and should be no bother for healthy wolves when they mean business.

2) Told to us in Zaman's camp in Ishtemich Valley

In the Afghan month of Mizan (21 Sept. to 20 Oct.) (2001), a group of Kyrghyz traveling down to Khandud and camping in the Jangal-e-Gurvash lost two horses to wolves.

3) Told to us in Zaman's camp in Ishtamich Valley

Last year (2001) in the month of Mizan (21 Sept. to 21 Oct.) (2001), they lost over a period of several days four yaks (one young bull, two cows and one calf), killed one by one. Not sure how many wolves were involved.

4) Bakhshah's camp in Ishtemich Valley

This year (2002), and only three days before we arrived (25 Sept.), a lone wolf killed a sheep and a calf by the camp despite the dogs. It was nighttime.

On the night of our arrival (28 Sept.), our sleep (probably about 01.00 or 02.00) was disturbed by barking dogs and bleating sheep, which we were told had been prompted by a wolf attack. This time the dogs seem to have earned their keep!

5) Juma Khan's camp at the Porsan Valley

This was on our return from Ishtemich and Shikargah. The day before we arrived (29 Sept.), a lone wolf killed a sheep. It was in daytime. The dogs were at some distance and too far to help. This was the first loss they had suffered to wolves this year.

6) Neshkow village in the Wakhan Valley on the way to Sarhad, where we spent the night as the guest of Sufi.

In general discussion on agriculture and herding, people expressed the opinion that sometimes wolves were a bother, but if herdsmen had good dogs there was no cause to worry too much.

7) Sarhad-e-Broghil-upper Wakhan at foot of Broghil Pass and the Pamir-e-Khord.

Four days before we arrived (30 Sept.) six wolves had killed a two-year-old cow while it was out grazing on the mountains near the Dehkhan Khanah aylaq up the Broghil Valley. It was daytime.

8) Ayum Beg, who lost his animals to a snow leopard-Wazut village

Three days before our visit (1 Oct.), three wolves had killed a sheep and savaged two others near the village before being driven off. It was daytime.

D. Other Hunting Stories

Everyone we met in Wakhan and Pamir, farmers, herdsmen and traders alike, were aware of Mr Karzai's ban on hunting. Indeed, it was from them that we learned of the ban and of the fact that in this area at least,

there has been a general collection of armaments. The hunting ban appears to be being honoured. However, most villages of any size have one or two people who act as more or less official 'hunters' and a number of others who go hunting from time to time for meat or sport. Such are Md. Sabir, the excellent hunter/ guide from Khandud, who came with us on our mission into the mountains. Others, like our horseman Fazl and Hayatulluh in Khandud, go hunting from time to time and may kill two three ibex or wild sheep in a season, or like the Uzbeq trader from Khandud, Abdul Hudud, go hunting with their Kyrghyz friends when on trading trips into the Little Pamir. Itinerant traders and peddlers who ply their business with the herding Wakhis and Kyrghyz often carry a '*mush kush*' 0.22 rifle with them with which to shoot partridges (chukar) and hares for the pot.

We came across no professional hunters hunting fur animals. Most hunting is for meat and not trophies.

The following are a selection of anecdotes we were told along the way:

1) Hayatullah's Marco Polo-Khandud

Hayatullah has a fine head of a Marco Polo of about 9 1/2 years sitting on the wall of his yard. He shot it about a year ago in the Shikargah Valley in the Big Pamir on a hunting trip.

2) Abdul Hudud's Story of the Vultures

About a year ago on a trading trip to the Kyrghyz in the Little Pamir, Abdul Hudud (Uzbeq trader from Khandud) went hunting one day by himself and shot two Marco Polo rams. He immediately performed the '*halal*' (Islamic cutting of the throat) on them, but as they were too heavy to bring off the mountain by himself, he went down into the valley to the nearest Kyrghyz camp to get help. As he left, vultures began to gather-hundreds, according to Abdul Hudud. By the time he got back with his Kyrghyz friends, the vultures had cleaned up and there was nothing left but bones.

When we were high up on the Dalriz pass from Sarhad we attracted the attention of two lammergeier and several griffon vultures who gave our party close scrutiny for some while until they got bored and gave up the idea that we might be a hunting party.

3) Wildlife numbers now and then-Sarhad-e-Broghil

While staying in Sarhad, we had a number of discussions on the relative numbers of wild game animals-mainly ibex and urial sheep in that area-before the Soviet occupation, during the occupation, and later during the Najibullah regime and then under Professor Rabbani's government and now.

The general consensus was that the wildlife did well during the Soviet occupation. There were several military posts in and around Sarhad and up in the Broghil Pass.

The Soviets were very strict and did not allow their officers or soldiers to go hunting, and the local population were afraid to be seen wandering about with a gun. In fact, the wild game became very used to the coming and going of helicopters, the rumble of military transport, and occasional field firing exercises, and would come quite close to the settlements, particularly in winter.

After the Soviets left, things were not so good. Najibullah briefly had a garrison in Sarhad, which was later replaced by one put there by Rabbani. Quite a bit of hunting for meat took place at that time, and indeed one man reported seeing camel-loads of carcasses coming down from the Little Pamir. This, however, seems to have stopped after the garrison was withdrawn some years ago.

They have not been seeing so many wild game animals coming close to the settlements in recent winters, but they say there are quite good numbers higher in the mountains. They put this down not only to hunting

having scared the animals off but also to the fact that recent winters have been very open, and there has not been so much severe winter weather to force the animals down close to the settlements.

4) Fazil's Azada Palang

Fazil recounted the story of when he was still a boy, one summer's day out on the mountains behind Qala Panja with a pair of binoculars he spotted a strange and beautiful animal like a small leopard. On looking closely at it he recognized it as what is locally called an Azada Palang, or free leopard. On being shown various illustrations by Dr Mishra, he pointed to the illustration of a leopard cat. Local myth holds that this animal has an extra claw in its tail! We heard this myth repeated elsewhere in reference to the Azada Palang.

E. Summary of the Mission's Sightings

1) 28/09/02 Ishtemich Valley above Bakhshah's camp west slope in the snow among the rocks. Five mature male ibex. Observed quietly by all at about 800 metres. At about 4 300 metres altitude.

2) 28/09/02 Ishtemich - lower Shikargah Valley east slope, on high terrace. Twenty-eight Marco Polo - ewes and lambs. Observed first from spying point on the moraine at the bottom of the Khoshabad Valley, later moved to a closer spying point. Very quiet, observed quietly by all at about 900 metres distance. Most ewes with lambs at foot. At about 4 300 metres altitude.

3) 29/09/02 Shikargah Valley before climbing up the Ganjab moraine. Three mature male ibex observed by Md. Sabir. Moved out of sight. At about 4 300 metres altitude.

4) 29/09/02 Shikargah Valley, below the Chap Kul lake above Ganjab hunting camp at about 4 850 metres altitude. Six mature Marco Polo rams at about 400 metres. Very good view seen by all, until they quietly moved out of sight. Had seen us.

5) 29/09/02 Also in snow round about and above Ganjab hunting camp. One hare seen. Fresh tracks of fox, wolf, and Marco Polo. Signs of a bear chewing and claw marks on willow beams in old hunting camp.

6) 01/10/02 Warwarm Valley. Seen by C.M., Assadullah, and Fazil-fresh tracks of snow leopard as well as sighting of mixed herd of male and female Ibex. Bear scats-one old bear and one young bear in barley stubble. A couple of weeks old by account of herdsmen.

7) 03/01/02 Dalriz Pass Sarhad-e-Broghil. In the snow in last rocky gully before the top of the pass, tracks of snow leopard, wolf, fox, marten, and hare.

8) 03/01/02 On plateau above Dalriz Pass, looking over the Wakhan gorges. Sixteen ibex disturbed by Md. Sabir while scouting. Asleep on a rocky terrace, 3 males- oldest 6 years-plus 9 females and 4 young.

1 INTRODUCTION

"When the traveler leaves Badakhshan, he goes twelve days' journey east-north-east up a river valley belonging to the brother of the lord of Badakhshan, where there are towns and homesteads in plenty, peopled by a warlike race of Moslems. After these twelve days he reaches a country called Wakhan of no great size, for it is three days' journey across in every way. The people, who are Moslems, speak a language of their own and are doughty warriors. They have no ruler except one, whom they call 'nona', that is 'count' in our language, and are subject to the lord of Badakhshan. They have wild beasts in plenty and game of all sorts for the chase.

When the traveler leaves this place, he goes three days' journey towards the north-east, through mountains all the time, climbing so high that this is said to be the highest place in the world. And when he is in this high place, he finds a plain between the mountains, with a lake from which flows a very fine river. Here is the best pasturage in the world; for a lean beast grows fat in ten days. Wild game of every sort abounds. There are great quantities of wild sheep of huge size. Their horns grow to as much as six palms in length and are never less than three or four. From these horns the shepherds make bowls from which they feed, and also fences to keep in their flocks. There are also innumerable wolves, which devour many of the wild rams. The horns and bones of the sheep are found in such numbers that men build cairns of them beside the tracks to serve as landmarks to travelers in the snowy season." Marco Polo (1254-1324) from 'The Travels - The Road to Cathay' .

Note: It was interesting to compare these observations made almost 730 years ago by the famous Venetian merchant adventurer, with the present. In certain respects it could act as a passable guide to the Wakhan and Pamir for today. Although the numbers of wild game are sadly diminished their descendants as well as their predators are still happily to be found among the snowy heights and alpine pastures of the *'Bam-e-Dunya'* (The Roof of the World). It is the responsibility of this generation to ensure that this is still true for the generations to come. Cairns made up by the local herdsmen from the horns and skulls of ibex and wild sheep killed by wolves still mark the graves of saints and point the rocky way for travelers. For those who still must walk and ride, the distances as described are still uncannily accurate in measurements of time as are the salient points of geography, and as the Soviet forces discovered to their cost, the mountains and valleys of Badakhshan are still inhabited by 'dauntless warriors'.

1.1 Wakhan Corridor

The Hindu Kush/Himalayan mountain system of south Asia includes several mountain ranges, including the Great Himalaya, the Karakoram, the Hindu Kush, and the Pamirs, which extend over 3 500 km and across nine countries (from Afghanistan in the west to Myanmar in the east). These four great mountain ranges meet on the borders of Pakistan and Afghanistan. The formation of this relatively young mountain system during the Tertiary created new habitats and dispersal routes for flora and fauna. Consequently, life in these mountains became influenced by elements from five biogeographical subregions, the Mediterranean and Siberian (of the Palaearctic region), west Chinese, Indochinese, and Indian (Oriental) (Mani 1974, Schaller 1977). The fauna of this mountain system is largely Oriental towards the east, while it gets mixed with Palaearctic elements in the west. Among the large mammals in the high mountains, large carnivores such the snow leopard, the wolf, and the brown bear are Palaearctic, and so are their main prey, the wild goats and wild sheep. Among the species of mountain ungulates are the markhor (*Capra falconeri*), the ibex, the arghali and the urial, each of which reaches west into Afghanistan.

The westernmost limit of this mountain system is defined by the Hindu Kush range, which on its eastern side is contiguous with the Karakoram. Straddled between the Hindu Kush in the south and the Alai in the north is the Pamir range, spread over Tajikistan, Western China, Northern Pakistan, and the Wakhan Corridor in Eastern Afghanistan.

ANNEX 6: BIRDS IDENTIFIED ON MISSION

Although the total number of species positively identified by Fitzherbert and Dr Mishra on this mission through Badakhshan to the Wakhan Corridor and the Afghan Pamir is not so extensive, it is nonetheless an interesting list and includes a few species not previously listed in the 1970s reports of Petocz, Habibi, and others. Many species nesting in the high mountains in the summer had already migrated, and the main autumn migration of wild fowl and raptors, and so on down the Wakhan Corridor had already passed before the mission arrived. The list is ordered as is commonly laid out in most handbooks. No doubt some species were missed, especially among the finches and buntings often seen briefly, or in flocks at a distance particularly in the cultivated valley bottoms.

Great Crested Grebe (*Podiceps cristatus*): Three birds seen on small lake/water splash near Nishkaw, upper Wakhan.

Grey Heron (*Ardes cinerea*): Upper Wakhan River Valley ones and twos on water flashes and small lakes near the river. Probably on passage.

Mallard (*Anas platyrhynchos*): Wakhan Valley. Small flocks of up to 15/20 on water flashes. On passage.

Teal (*Anas crecca*): As for mallard and seen in company with. Twos and threes. On passage.

Golden Eagle (*Aquila chrysaetos*): Pamir-e-Kalan (Big Pamir-Ishtemich Valley Upper Wakhan Valley towards the Pamir-e-Khord (Little Pamir). One or two pairs seen almost every day, at great height.

Bonelli's Eagle (*Hieraetus fasciatus*): Single bird observed flying and settled on the village chaman-pastures. Main Wakhan Corridor between Khandud and Qazi Deh.

Goshawk (*Accipiter gentiles*): Pair observed hunting willow scrub in lower Ishtemich Valley, Big Pamir.

Buzzard (*Buteo buteo*): Single bird observed on way up to the Ishtamich Valley, Big Pamir.

Long Legged Buzzard (*Buteo rufinus*): Single bird. Badakshan on way back to Faizabad.

Lammergeier (*Gypaetus barbartus*): One or sometimes a pair seen almost every day while we were in the Big Pamir and also in the Little Pamir, upper Wakhan Valley on the Dalriz Pass.

Himalayan Griffon (*Gyps himalayensis*): Six in the sky together top of the Dalriz Pass, Little Pamir. (Almost certain to be *himalayensis* in this region, but possibly *Gyps fulvus*, distance too great for positive identification.)

Kestrel (*Falco tinnunculus*): Observed almost daily. Ubiquitous.

Merlin (*Falco columbarius*): A pair observed. Tussock pasture and water flash-upper Wakhan Valley, near Neshkow upper Wakhan Valley. On passage.

Himalayan Snowcock (*Tetraogallus himalayensis*): Only signs, droppings and tracks seen. Warwarm Valley in Big Pamir, and Dalriz Pass Little Pamir. No sightings.

Chukar (*Alectoris chukar*): Very common, and big coveys of 20+ birds. Commonly seen and often heard. Popular as a cage bird and for fighting, found in most bazaars. Ubiquitous to all mountain areas.

Coot (*Fulica atra*): Ones and twos. Water flashes. Upper Wakhan Valley

Common Sandpiper (*Tringa hypoleucos*): Single birds regularly observed along mountain streams throughout the area visited.

Rock Pigeon (*Columba livia*): Cliffs and rocky places throughout Badakhshan. Often on cultivated land and stubbles. At higher altitudes sometimes in mixed flocks with hill pigeons.

Hill Pigeon (*Columba rupestris*): Common above 3 000 metres. Often seen in sizeable flocks of 50 to 100 birds on wheat and barley stubbles in the company of choughs and sometimes in mixed flocks with rock pigeons.

Snow Pigeon (*Columba leuconota*): Flock of six birds observed by Dr Mishra near the top of the Dalriz Pass, Little Pamir.

Rufous Turtle Dove (*Streptopelia orientalis*): Very common all the way from Faizabad to Ishkeshem and though the Wakhan. Small flocks, usually associated with wooded areas and cultivated land. On passage.

Little Brown Dove (*Streptopelia senegalensis*): Small flocks associated with settlements. All through Badakhshan.

Hoopoe (*Upupa epops*): Commonly observed all through from Faizabad to Wakhan, usually associated with settlement and cultivation. Not seen at higher altitudes, above 3 000 metres. Single birds and pairs.

Horned Lark (*Eremophia alpestris*): Flocks in winter plumage common throughout Wakhan and Pamir - usually but not always observed near upland cultivation and stubbles.

Crag Martin (*Hirundo rupestris*): Waduj gorges and other rock places Between Faizabad and Ishkeshem and through Wakhan to Pamir. Just about to migrate.

Water Pipit (*Anthus spinoletta*): Usually single birds or pairs. Pamir. Artemisia hill slopes with rocks.

White Wagtail (*Motacilla alba*): Ubiqitous up to well above 4 000 metres.

Grey Wagtail (*Motacilla cinerea*): Common but not as common as White Wagtail.

Red Backed Shrike (*Lanius collurio*): Single observed by Fitzherbert. Jangal-e- Gurvash in buckthorn thickets by Pamir river. Big Pamir.

Whitethroat (*Sylvia communis*): Single observed by Fitzherbert in buckthorn thickets by Pamir river. Jangal-e-Gurvash camp.

Stonechat (*Saxicola torquata*): Wakhan. Riverine scrub.

Northern Wheatear (*Oenanthe oenanthe*): (ARF agreed new english designation) All through from Faizabad to Ishkeshem And up the main Wakhan Corridor. Not observed at higher altitudes above 3 500 metres at this season.

Red Tailed Wheatear (*Oenanthe xanthoprymna*): As with common wheatear. Single birds and pairs. Most seen in the Waduj Valley and gorges between Baharak and Zebak.

Black Redstart (*Phoenicurus ochruros*): Commonly observed from Faizabad to Wakhan Corridor.

Guldenstadt's Redstart (*Phoenicuros erythrogaster*): Commonly observed all through from the Waduj gorges to up to 4 000 metres+ in the Pamir. Single birds as well as small flocks preparing for migration. A constant delight of bright colour on our mission.

White-Capped Redstart (*Chaimarrornis leucocephalus*): Single observed by Dr Mishra in Wakhan near Khandud.

Blue Whistling Thrush (*Myiophonus caeruleus*): Single birds as well as small groups of three or four birds observed from the Warduj gorges through to Zebak and Ishekeshen. Mountain torrents associated with rose and scrub willow, with rocks and small grassy flats.

Tit (*Parus sp.*): Single bird, not clearly identified observed in bushes near village in the Wakhan by Fitzherbert. Possibly Yellow-breasted tit-*Parus flavipectus*

Rock Nuthatch (*Sitta neumaye*): Observed in rocky valleys and more sheltered slopes all through from the Warduj gorges through to the Dalriz Pass in the Little Pamir.

Wall Creeper (*Tichodroma muraria*): Single observed by Dr Mishra walking up steep mountainside to the Dasht-e-Yupgaz plateau, Big Pamir.

Dipper (*Cinclus cinclus*): Single observed by Fitzherbert flying down the mountain torrent in the upper Shikargah Valley, Big Pamir.

Grey-necked Bunting (*Emberiza buchanani*): Wakhan-flocks in cultivated land.

House Sparrow (*Passer domesticus*): Ubiquitous around human settlement.

Tree Sparrow (*Passer montanus*): Ubiquitous. Often mixing with house sparrows but probably predominates at higher altitudes.

Common Indian Mynah (*Acridotheres tristis*): Common around all human settlement but not at high altitudes; for example, Wakhan and above at this time of year.

Magpie (*Pica pica*): Ubiquitous up to above 4 000 metres. Usually associated with human settlements and also herding camps. Usually in ones and twos and also family groups of four or five.

Chough (*Pyrrhocorax pyrrhocorax*): In large flocks throughout mountainous Badakhshan above 2 000 metres including Wakhan and Pamir. Commonly seen feeding on stubble fields Above 3 500 metres tends to be replaced by the Alpine Chough. Mixed flocks observed.

Alpine Chough (*Pyrrhocorax graculus*): Large flocks observed throughout the Pamir. mainly above 3 000 metres.

Raven (*Covus corax*): Observed daily in Pamir and Wakhan. Single birds as well as pairs and four or five if food brings them together.

Carrion Crow (*Corvus corone corone*): Ubiqitous. Often observed in flocks of twenty or thirty birds gathered to feed on buckthorn berries or wheat stubble, or as singles and pairs.

ANNEX 7: WALKING AND RIDING TIME DISTANCE IN THE PAMIR

Table 1. Walking/riding times in the Pamir. (All are approximate, as reported to us and subject to modification. Allowance has been made for the fact that the local people generally travel faster than foreigners, who also wish to spend time observing along the way.)

From	To	Comments
Faizabad	Ishkeshem	With the Badakhshan roads in their currently much improved state, it takes approximately one day to drive from Faizabad to Ishkeshem on the Tajikistan border (floods and landslides permitting).
Ishkeshem	Qala Panja	One short day driving
BIG PAMIR		
Qala Panja / Ghaz Khan	Ishtemich / Shikargah Valley	Leave two days for walking and riding to herders camps in the Ishtemich Valley. Camp grounds and aylaq can be found at Jangal-e-Gurvash by the river and at Porsan where there is a 'peddler's rest.'
Ishtemich / Shikargah Valley	Alisu River Valley	One day's ride crossing en route the following valleys - Darreh Naqjarshid and D. Manjalik. Still Wakhi herders but not very many camps
Alisu river Valley	to Betubut via Jilmasert	One day's ride. Still Wakhi herders but not very many camps.
Betubut	Elghunoq via Talibay and Sert	Five hours ride without rest. Say one day. In Elghunoq there are the first Kyrghyz herding camps in the Big Pamir.
Elghunoq	Beshkanak	Five hours' ride without rest. Say one day. All Kyrghyz.
Beshknak	Moolah	Five hours' ride without rest. Say one day. All Kyrghyz.
Moolah	Sari Muqur / Zor Kul Lake	Two hours.
Qala Panja / Ghaz Khan	Zor Kul lake(Big Pamir)	Six to seven days without diversions on horseback.
LITTLE PAMIR		
Qala Panja / Ghaz Khan	Sarhad-e-Broghil	Five or six hours' drive depending on the state of the flood washes.
Sarhad-e-Broghil *	Bozoi Gumbaz / Waghjir Valley	Probably best to reckon on three days' ride from Sarhad to Bozoi Gumbaz and the Waghjir Valley. This is the summer quarters of Efendi Bay tribal head of the Little Pamir Kyrghyz. Along the way are a number of camps. The first Kyrghyz camps are at Ak Jilga (White Mare). These are named as follows: Sarhad - Kotal-Dalriz Pass - Baharak - Sang-e-Neveshta (the inscribed stone) - Garbin Warm - Albeliz - Kyrchyn - Ak Jilga (mountain camp) - Bozoi Gumbaz - Waghjir.
Bozoi Gumbaz / Wajghjir Valley	Waghjir / Yuli Pass via Birgitikho	The Waghjir Valley goes off eastward to the Chinese frontier and the Yuli Pass via Birgitikho, which is Effendi Bay's winter quarters. Best allow 4 to 5 days from Bozoi Gumbaz to Yuli Pass.
Bozoi Gumbaz / Waghjir Valley	Chaqmaqtin lake	Two to three days. The main Wakhan Valley goes straight on to Chaqmaqtin Lake via a series of campsites including - Cheshmeh Arkhar (The Marco Polo ram's spring), Hawz-e- Chaqmaqtin (otherwise called Haws-e-Chalab), of camps including Mynareh, and valleys leading off to each side including: D. Arghil, D. Kyzyl Ghoran, D. Andamin, D. Tasari Bala, D. Taysari Pain, D. Jarmashir, D. Otobil.
Sarhad-e-Broghil	Chaqmaqtin lake (Little Pamir)	Five to six days without diversions on horseback.
Sarhad-e-Broghil	Yuli Pass into China	Eight or nine days without diversions on horseback.

** Note: Starting in Sarhad-e-Broghil, in summer the people travel the mountain road over the Dalriz Pass, keeping well above the river gorges. In winter when the river is frozen, they can travel along the bed of the river itself.*

Summary

To summarize: Starting in Faizabad, the Provincial Centre of Badakhshan, two days should be allowed to drive to Qala Panja and another day to drive to Sarhad-e-Broghil. It is possible to drive these distances in a shorter time, but allowance needs to be made for the state of the roads. Even though the roads between Faizabad and Ishkeshem and between Ishkeshem and Qala Panja have been much improved in recent years, they are still subject to seasonal floods and landslides.

The road between Qala Panja and Sarhad-e-Broghil is unimproved, and very little wheeled traffic uses it. We were told that possibly one vehicle a week at the very most travels this road. This road frequently disappears where huge stony flood washes cross its path. Four-wheel-drive vehicles in good condition are essential, and it is advisable to carry extra cans of diesel. No fuel is available along the road or in Sarhad.

To travel from Qala Panja/Ghaz Khan into the Big Pamir, it is necessary to walk and ride up the drove road, which leads eastwards up Pamir River Valley. Horses can be hired without difficulty and are required both for riding and for carrying baggage and supplies.

It should be noted that there is a road all the way up the Pamir Valley on the Tajikistan side as far as Khargushan, just short of Zor Kul Lake. It then turns north up into the main Pamir range and Murghab, where it joins the main Osh to Khorogh road through the central Tajikistan Pamir.

It is two days' ride/walk from Ghaz Khan to the Ishtemich/Shikargah Valley, which was where the King had a hunting camp for hunting Marco Polo sheep in the years before the Soviet War. We stayed three nights there and another three nights at other camps between Ghaz Khan and Shikargah, as recorded in the main report.

From Shikargah it requires another two days to ride east to the first Kyrghyz herding camps at Elghunoq, via possible campsites at Alisu and Talibay. It takes another two to three days' ride to Zor Kul Lake via possible campsites at Beshkanak, Moola, and Sar Mukhur.

In the summer months it is possible to walk and ride from Zor Kul Lake across two high passes to Waghjir, the Little Pamir, and Chaqmaqtin Lake. At least five or six days should be allowed for this. To avoid bad weather on the high passes, this route should only be attempted between June and August.

Otherwise, the best way to approach the Little Pamir is by road as far as Sarhad-e-Broghil and onward from there by foot and by horse eastward up the Wakhan Valley. Horses can be hired in Sarhad. From Sarhad it takes two days to walk/ride to the first Kyrghyz herding camps at Ak Jilga/Bozoi Gumbaz, via possible campsites at Baharak, Sang-e-Neveshta, Garbin, Warm, Al Beliz, and Kyrchin. From Bozoi Gumbaz the valley and the path divide, one going southeast up the Waghjir Valley to Birgitikho and the other eastward to Chaqmaqtin Lake and eventually to the Tajikistan frontier. The Waghjir Pass crosses into the Karkorum Valleys of Pakistan's Northern Areas and Gilgit. The high Yuli Pass crosses over into China to Tash Gorgan in the province of Xinjiang. Four or five more days should be allowed to get that far. The path on to Chaqmaqtin Lake would require a full day (at least) from the bottom of the Waghjir Valley and another three to four days to the Tajikistan frontier.

ANNEX 8: TABLE OF PLACES, HEIGHTS AND COORDINATES

Table 1. Qala Panja/Ghaz Khan to Shikargah River Valley (Drove on road travelling east up the left bank of the Pamir River, right bank is Tajikistan)

Place Name	Comments	Latitude	Longitude	Altitude
Syst Bridge		36,59.180' N	72,46.324' E	Not recorded
Ghaz Khan	Village	37,00.552' N	72,36.599' E	3 000 m
Prip Bridge	To Tajikistan	37,03.655' N	72,41.696' E	3 000 m
Climbing up to higher terrace		37,03.984' N	72,42.818' E	3 200 m
Dargaw -e- Kalan, Shytkawn Valley	1st stream crossed	37,04.603'N	72,42.818'E	3 270 m
Shab Dasht	Plateau	37.04.932'N	72,42.889'E	3 375 m
Isik Wada	2nd stream crossed	37,06.774'N	72,44.067'E	3 300 m
Warwarm Valley	Abandoned aylaq where spied ibex and found snow leopard tracks 1 Oct.	37,05.434'N	72,45.744'E	4 215 m
Yupgaz aylaq	Stayed night of 1 Oct.	37,05.551'N	72,43.988'E	3 525 m
Jangal-e-Gurvash	1st nights camp by river 26 Sept.	37,07.434'N	72,44.545'E	3 290 m
Porsan aylaq	Stayed night 30 Sept.	37,07.347'N	72,45.532'E	3 400 m
Dargan-e-Porsan	3rd stream crossed	37,08.271'N	72,45.023'E	3 340 m
Khar Dasht	Plateau	Not recorded		
Dargan-e-Sinin	4th stream crossed	Not recorded		
Dasht-e-Schtur	Plateau	37,09.023'N	72,45.981'E	3 545 m
Dasht-e-Samlak	Plateau	37,09.690'N	72,46.330'E	3 700 m
Dargan-e-Zarnow	5th stream crossed			
Bisper-e-Yakht	Point on the road	37,11.459'N	72,46.882'E	3 785 m
Dasht-e-Varzant	Plateau	37,11.945'N	72,47.214'E	3 700 m
Dargan-e-Varzant	6th stream crossed	Not recorded		
Dasht-e-Jamghoz	Plateau .	37,12.783'N	72,48.137'E	3 800 m
Faiz Raizan ziyara,Duar Khan aylaq,Zaman's camp	Saint's grave with M.P. & Ibex horns night of 27 Sept.)(lower Ishternich Valley	37,11.862'N	72,51.265'E	3 930 m
Raish Kaigar		37,12.989'N	72,48.445'E	3 940 m
Farak Shikar aylaq	Bakhshah's camp. Stayed nights of 28 and 29 Sept.	37,11.329'N	72,52.307'E	3 970 m
Cheshain	Spying point on moraine at bottom of Khoshabad Valley, from which we spied herd of M.P ewes and lambs 28 Sept.	37,10.457'N	72,54.400'E	4 110 m
Spying point at bottom of Shikargah Valley	2nd spy point at M.P.ewes and lambs 28 Sept.	37,10.195'N	72,55.642'E	4 400 m(estimated height of M.P. ewes and lambs)
Darrah Beg aylaq	Herding camp in Shikargah Valley at foot of big moraine	37,09.271'N	72,57.385'E	4 255 m
Ganjab	Old hunting camp in Shikargah Valley. Bear claw and tooth marks on willow beams. 29 Sept.	37,08.580'N	72,57.993'E	4 300 m
1st Swamp annd sedge pasture		37,06.753'N	72,59.297'E	4 500 m
Jun Ali	Stone sheep fank at top of big moraine	37,06.324'N	73,00.229'E	4 600 m
Spying Point into swampy corrie	Upper Shikargah Valley where we spied the 6 M.P. rams, 29 Sept.	37,05.565'N	73,00.767'E	4 700 mspied MarcoPolo rams
Hawz-e-Chap	Hawz lake above where we spied M.P. rams, 29 Sept.	37,05.732'N	73,00.976'E	4 750 m

Table 2: Sarhad-e-Broghil to Ishkeshem

Location		Coordinates		
Right Bank	Left Bank	Latitude	Longitude	Altitude
Sarhad		36,59.974' N	73,26.256' E	3 400 m
	Dehkhan Khana aylaq. Broghil	36,56.485' N	73,26.534' E	3 500 m
	Zartgar aylaq. Broghil	36,55.307' N	73,25.349' E	3 550 m
	Zartgar lake	36,55.307' N	73,25.349' E	3 565 m
Maidan-e- Dalriz		36,58.867' N	73,30.140' E	4 000 m
Spying Point above Dalriz Pass		36,59.220' N	73,31.396' E	4 325 m
Chirkai		37,00.394' N	73,25.342' E	
Potokh Wash		37,00642' N	73,24218' E	
Potokh		37,00486' N	73,23.014' E	
	Sekung	36,59.822' N	73,21.278' E	
	Mers-i-Bala	36,59.761' N	73,20.306' E	
Isik		36,59.916' N	73,19.822' E	
	Mers-i-Pain	37,00.028' N	73,17.992' E	
Shiship		37,00.010' N	73,16.502' E	
Rookut Bridge		36,59.694' N	73,15.686' E	
Reckawn		36,59.827' N	73,14.527' E	
Wardyf		36,59.431' N	73,11.752' E	
Wardyf Lake		36,59.280' N	73,11.521' E	
Shah-i-Ukayat		36,59.020' N	73,11.195' E	
Jangal-i-Wardyf		36,58.393' N	73,09.419' E	
	Deh Glaman	36,58.337' N	73,09.092' E	
	Deh Glaman	36,57.923' N	73,07.876' E	
	Darreh Kamkhan	36,57.575' N	73,05.558' E	
Roorung		36,57.474' N	73,03.556' E	
	Kharech	36,57.571' N	73,02.868' E	
Dehkhan Khaneh		36,57.501' N	73,01.414' E	
Kyryt Bridge		36°57.246' N	72°59.414' E	
	Kyryt	36°57.204' N	72°58.412' E	
	Baba Tangi	36°57.089' N	72°57.151' E	
	Baba Tangi	36°57.150' N	72°56.618' E	
	Tangi	36°57.205' N	72°55.771' E	
Sargaz Bridge		36°57.915' N	72°54.724' E	
Kid Hot		36°58.048' N	72°54.118' E	
	Morabar	36°58.118' N	72°53.720' E	
Shyrk		36°58.246' N	72°52.336' E	
Qala Ost		36°58.170' N	72°51.456' E	
Sast-i-Bala		36°58.649' N	72°48.800' E	
Wazut Sast		36°58.926' N	72°47.409' E	
Bridge Syst		36°59.615' N	72°44.077' E	
	Sheikhur	36°59.615' N	72°44.077' E	
	Abgarch	36°59.994' N	72°42.599' E	
	Pikot	37°00.552' N	72°36.554' E	
Ghaz Khan		37 00.552' N	72 36.599' E	3 000 m
	Qala Panja	36°59.793' N	72°34.688' E	2 990 m
TAJIKISTAN (from this point downstream of the confluence of the Pamir and Wakhan rivers the Panj river forms the frontier between Afghanistan and Tajikistan, all villages along the left bank are in Afghanistan, all on right bank are in Tajikistan)	Qala	36°59.072' N	72°33.996' E	
	Jangal-i-Qala	36°59.350' N	72°32.841' E	
	Pakuin	36°59.220' N	72°28.931' E	
	Pokoof	36°59.263' N	72°28.324' E	
	Ishput	36°59.007' N	72°24.966' E	
	Ishpur Chaman	36°58.835' N	72°23.218' E	
	Isik	36°57.978' N	72°20.037' E	
	Khandud	36°57.009' N	72°19.008' E	Charu alt?
	Shur	36°56.653' N	72°17.801' E	
	Yamit	36°56.198' N	72°16.886' E	
	Pygysh	36°55.329' N	72°14.506' E	
	Organd-i-Bala	36°55.043' N	72°14.063' E	
	Organd-i-Pain	36°50.135' N	72°05.004' E	
	Wargan	36°48.826' N	72°02.523' E	
	Dekogan	36°47.925' N	72°01.109' E	
	Dekogan	36°46.792' N	71°59.310' E	
	Shekawr	36°44.967' N	71°57.144' E	
	Shekawr	36°44.602' N	71°56.533' E	
	Shekawr	36°43.999' N	71°55.074' E	
	Shiber Khan	36°41.402' N	71°51.866' E	
	Wark	36°40.641' N	71°49.782' E	
	Qazi Deh	36°40.220' N	71°46.183' E	
	Ftor	36°40.233' N	71°41.744' E	
	Ishkeshem	36°40.584' N	71°39.971' E	2 630 m

ANNEX 9: TRAVEL ADVICE FOR FUTURE MISSIONS TO THE WAKHAN AND PAMIR

Introduction

This annex aims to provide some helpful hints and advice for those planning future missions to the Wakhan and Pamir, since it is one of the remoter and inaccessible parts of Afghanistan. These are based on the assumption that access to the Wakhan and Pamir is confined to approaching the area from Afghanistan. Should easy access be possible from either Tajikistan or Pakistan, this advice might be modified. We have recommended that a much more detailed environmental assessment mission be fielded, which should cover the whole of the Wakhan and both Pamirs and take place over a period of between two and three months. This will require very careful logistical planning.

Time, Roads, and Transport

The first thing to bear in mind when planning any mission to the Pamir region of the Wakhan is that it requires sufficient time, particularly if the objective is not just to travel but to work and make observations and carry out inquiries along the way.

There was not sufficient time allowed in this mission for us to reach the northeastern part of the Big Pamir inhabited by the Kyrghyz, nor the Little Pamir, also inhabited by the Kyrghyz. Any comprehensive mission, including both the Big and Little Pamir really requires at least a full month or five weeks from Faizabad.

Detailed information on travel times within the Wakhan is provided in Annex 7.

Cost of Hiring Horses and Horsemen

The mission found no difficulty in hiring horses and horsemen in both Qala Panja/Ghaz Khan and also in Sarhad. The horses were all in excellent condition and the horsemen competent. Owners of horses do insist on accompanying the mission, which is understandable, as their horse is a valuable possession, and they want to ensure it is cared for properly. After some discussion we arrived at a mutually agreeable price of US$10 per day for horse and horseman. Horsemen and guides must be fed by the mission. Horsemen preferred to be paid in US dollars (or Pakistani rupees *kaldar*), but will accept Afghanis if pressed.

Sufficient horses should be hired for both riding and baggage. It should be noted that on some parts of the mountain paths it is too steep to ride. The mission walked for some of the way and rode in other places. On one day, when horses were not available, we hired donkeys, but these were soon exchanged for horses. For a longer summer mission in the high mountains, we were advised that yaks might also be hired both for carrying baggage as well as for riding. Yaks were much recommended for the comfort of their ride.

Where to Stay on the Road from Faizabad to Ishkeshem and Qala Panja to Sarhad

There are NGOs to stay with in Ishkeshem (Afghanaid and FOCUS). Prior notice through their provincial offices in Faizabad is advisable, with a letter of introduction.

It is possible to stay with Shah Ismael, the Ismaili leader of Wakhan, in Qala Panja. Again, a letter of introduction from the Aga Khan Development Network/FOCUS office in Faizabad is advisable.

If overtaken by night on the road between Faizabad and Ishkeshem, there is a simple 'maiman khanah' in Baharak, and in Zebak there are several friendly villagers, with guest rooms, including the family of Dr Hakim, who is UNAMA security officer in Faizabad.

It is also possible to stay in Khandud, the district centre of Wakhan, as we did on our return journey. This is two-thirds of the way down the main Wakhan Corridor between Ishkeshem and Qala Panja, where there is a *'peddler's rest'* for itinerant traders. It is possible to find villagers to stay with in the larger villages up the Wakhan Valley between Qala Panja and Sarhad-e-Broghil. In Sarhad itself there is a *'peddler's rest'* for itinerant traders owned by Kachi Beg, who is also responsible for the telephone connection between Sarhad and Khandud.

Need for Tents

Away from the roads, once it becomes necessary to walk and ride into either the Big or Little Pamir, any future mission must ensure that they take a tent or tents, sufficient to provide cover for mission members as well as guides and horsemen. We only needed to put a tent up twice, but on these two occasions it was absolutely necessary. Had we had time to go further into the mountains, it was very clear that a tent or tents would have become even more necessary, as many of the possible campsites would not be in places where there were herding camps. This mission at its largest number consisted of ten people-two international professionals, one Afghan professional, one guide, and six horsemen. Owners of horses always insist on accompanying their animals to ensure they come to no harm. Tent arrangements should take this into account.

If there is to be a longer assessment mission, it will be necessary to establish much more substantial camp bases in strategic locations from which to operate over a number of days. It was possible for this brief mission to stay in herding camps, but for a longer stay this would not be possible nor would it necessarily be appropriate.

Staying in Herding Camps

As the mission discovered, for much of the off-road part of the mission into the Big Pamir, we were able to stay with herders in their camps. These either consisted of collections of felt yurt tents (*khergah*) or simple stone cabins. As we found, most herding camps cater to guests and usually have a guest tent or guest room. The reason for this is that all are served by itinerant traders and peddlers and therefore must have somewhere for these people to stay. In addition, local traditions of mountain hospitality mean that all travelers must be given somewhere to stay the night. However, there are not always herding camps everywhere along the drove roads, and some herding camps are too poor to have a guest tent or guest room-thus the need for tents.

The Protocols of Being a 'Guest'

Any mission into the mountains must understand that the people with whom they stay, although incredibly hospitable and welcoming, are also very poor.

All we can do is to advise future missions to follow what we did, which was to take our own and sufficient basic supplies-rice, flour, chick peas, tea, sugar, potatoes, onions, cooking oil, fruit, sweets, salt, pepper, cumin, and so on. Whenever necessary, we bought a sheep from the local herders. The cost of a young male sheep was about US$9-10. A longer mission into the mountains will need to think carefully about how they supply themselves and replenish their supplies. Note should be taken of the fact that after Faizabad there is only one decent bazaar along the road in Baharak in central Badakhshan. There is not much available in Ishkeshem.

We also bought (in the Faizabad bazaar) a pressure cooker and a gas cylinder and cooker ring, plus basic cooking pots, kettles, plates, spoons, oil lamps and paraffin (kerosene), matches, toilet paper, and other supplies. Horses can carry all these supplies. Herding families can provide limited supplies such as yoghurt-*mast, chakar,* and *qurut*. Larger villages may be able to provide limited supplies of potatoes but not much else.

The families with whom we stayed usually joined us for the evening meal. When buying supplies, this should be taken into account. On occasions we would sit down fifteen for supper, and there were clearly other hungry mouths waiting elsewhere for any of the *pilaw* left over. These communal meals are a very good opportunity to get to know the local herders and discuss their problems and their lives.

We also came to a mutually agreeable arrangement for paying our hosts for the night's rest in their yurts and for the trouble taken by the women in cooking and baking. The equivalent of US$ 5 per night paid in local currency was agreed upon after discussion and was accepted.

Comfort and Local Facilities

Living conditions are very simple. Living, eating, and sleeping conditions are communal. Toilet facilities are nonexistent. Fuel in the mountains is usually provided by yak dung-*paru* (Tajiki) or *tezek* (Kyrghyz). Yurts do not have stoves with chimneys, as do those found in Kyrghyzstan and Mongolia. The smoke goes straight out through the hole in the roof formed by the roof wheel or *tunduk*. This means that the yurts can get quite smoky, particularly when it is raining or snowing and the felt is drawn across the roof opening. For those who are prepared to live in this fashion, it provides a wonderful opportunity to learn much about local life, and communal meals and living helps to break down social and cultural barriers. Such a mission may also find itself, as we did, sharing these guest facilities with itinerant traders and peddlers. These individuals are usually a fund of news and information from and about the herding camps they have been visiting. Contrary to expectation, we were not unduly troubled by fleas and bugs.

When staying in larger villages with better-off farmers or herders, the guest room may be more spacious and even well decorated with felts, *namad* and *qilim*. We found that with the exception of one well-to-do community leader who refused to accept any payment or food contributions, (Shah Ismael of Qala Panja the Ismaili leader) all other families with whom we stayed were happy to accept both a food and a cash contribution. In the case of some of the social standing of shah Ismael some sort of gift in kind would be appropriate in place of money if the stay is likely to be of any duration. Even this might not be accepted but would be polite.

Health and Medical Supplies

A carefully selected medical/first-aid kit should be taken by each international consultant. Fortunately this mission suffered no medical problems, but special note should be taken of diarrhea, colds, chills, cuts, and sprains. Packets of re-hydration salts are advised. Water purification tablets are very much a matter of personal opinion and taste. Tea is well-boiled and safe. The local habit in the Pamir is to drink copious bowls of milky, salty tea. Sugar is a real luxury in the high mountains and is rarely used. There are many springs and steams of pure water in the high mountains from which to fill water bottles, but care should be taken that there is no human habitation upstream of the source. Altitude sickness is a hazard to be taken into account, as any such mission into the Pamirs will necessitate going up to altitudes of 5 000 metres and above. Fortunately the 'drove road' into the Big Pamir climbs into the high mountains in very reasonable stages, but even the fittest can suffer from 'mountain sickness' , even the locals. Fortunately no one on our mission was afflicted beyond a mild headache.

Any mission must be prepared to be constantly importuned by local people asking for medicines, usually for headaches and stomach pains. In some cases in this area, these are undoubtedly caused by addiction to opium, for which such a mission can do little apart from providing aspirin. Advice from a medical practitioner experienced in Afghanistan and in such missions should be taken prior to such a mission.

Clearly, any consultants going to this area must be physically fit and should not be suffering from any heart complaint. We were commonly walking and riding for five and six hours a day all in high mountain country.



The Wakhan Corridor is located in the north-east of Afghanistan (shaded region)

The Wakhan Corridor, and in particular its eastern end in the Pamir Knot, has always been one of the most remote and least accessible corners of Afghanistan. It is well to note that the distance between Faizabad, the provincial capital of Badakhshan (already one of the remotest Afghan provincial centres), and the eastern tip of the Wakhan Corridor/Pamir Knot on the Chinese frontier is almost as far as from Faizabad to Islamabad in Pakistan, without the roads.

The impacts of 23 years of conflict in Afghanistan on the people and wildlife of the Wakhan were largely unknown prior to this study. Few UN and NGOs have assistance programs in the Wakhan due to its relative isolation, low population densities, and difficult access and to date scant if any attention has been paid to conservation or environmental issues. Prior to the mission, it was feared that conflict might have had extremely negative impacts on the wildlife populations of the Wakhan Corridor due to habitat destruction, displaced peoples and their demands for food and fuel, and encouragement of trade in wildlife and wildlife products.

1.2 Objectives of the Mission

UNEP organized a field team to the Wakhan Corridor from 19 September to 13 October 2002 (including travel time). The purpose of the mission was to collect information on the overall state of the environment in the Wakhan as well as key social, economic, and institutional pressures. In particular, the mission focused on assessing the current status of the Pamir-e-Buzurg wildlife reserve, known also locally as the Pamir-e-Kalan (for the sake of this report, it will be referred to as the Big Pamir, as differentiated from the Pamir-e-Khord or the Little Pamir). In the years before the Soviet War the Big Pamir had been designated by the King as a Royal Hunting Reserve. Later it was opened up for limited licensed trophy hunting, and in the 1970s it was designated as a National Reserve.